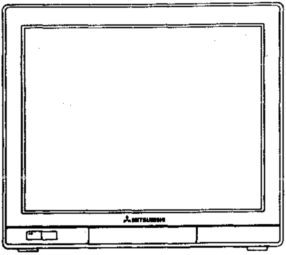
MITS-00365
1992

MITSUBISHI MANUEL DE SERVICE

TÉLÉVISION COULEUR



MODÉLE

CT-21M1FM
CT-25M1FM

MITSUBISHI ELECTRIC CORPORATION

CARACTERISTIQUES

Système de reception	Standard Fançais et CCIR (L, B/G)	
Système de couleur	PAL-SECAM	
Reception	VHF FRANCE	: 45~82, 115~305MHz
	EUROPE	: 47~68, 118~300MHz
	UHF	: 470~862MHz
Tension secteur	230 V 50 Hz	
Entrée d'Antenne	75 Ω	
Fréquence Intermédiaire	Vidéo	37,2 MHz (CCIR-B: V_L) 32,7 MHz (Exepté CCIR-B: V_L)
	Son	38,2 MHz (CCI-B/G: V_H, U) 39,2 MHz (CCIR-L) 31,7 MHz (CCIR-B: V_L)
	S/P chroma	37,131 MHz (Exepté CCIR-B: V_L) 32,77 MHz (CCIR-B: V_L)
Interporteuse	6,5 MHz/5,5 MHz	
Puissance son	5W + 5W (7W+7W puissance musica)	
Haut-Parleurs	10×5 cm ovales — 2 pièces	
Tube cathodique	Type A51EBV12X pouces 90° a chauffage rapide. <CT-21M1FM> Type A59EAK01X01 pouces 110° a chauffage rapide. <CT-25M1FM>	
Chassis	EURO-10F	
Dimension du coffret (en mm)	512×450×476 (L×H×P) <CT-21M1FM> 576×501×494 (L×H×P) <CT-25M1FM>	
Poids	22,1 kg <CT-21M1FM> 30,1 kg <CT-25M1FM>	

PRECAUTIONS DE SECURITE

NOTE: Observer les recommandations de sécurité se trouvant sur le chassis et au fond de l'appareil.

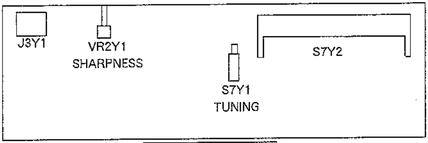
AVERTISSEMENT

1. Avant de réaliser des measures sur le téléviseur, utiliser un transformateur d'isolatio entre le secteur et celui-ci.
2. La mise sous tension d'un poste 'a chassis ouvert implique la présence de très hautes tensions dans le poste. En conséquence, seules des personnes suffisamment familiarisées avec les précautions d'usage peuvent entreprendre un travail sur l'appareil.
3. Ne pas installer, démonter ou manipuler un tube cathodique sans porter des lunettes de précaution. Pendant la manipulation, tenir le tube éloigné de soi et ne pas laisser approcher le personnel ne portant pas de lunettes de protection.
4. Si une intervention est requise, observer le cablage d'origine, et tout particulièrement dans la partie très haute tension de l'appareil. Si un court-circuit est détecté, remplacer les composants montrant des signes évidents d'échauffement.

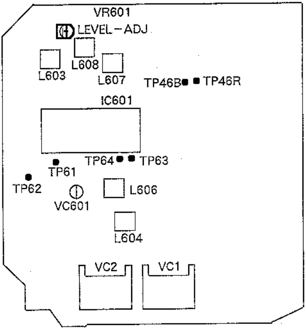
CONTRÔLE STATIQUE DE COURANT DE FUITE

Il est recommandé d'effectuer le contrôle de courant de fuite suivant la méthode ci-dessous, avant de retourner l'appareil 'a l'utilisateur.

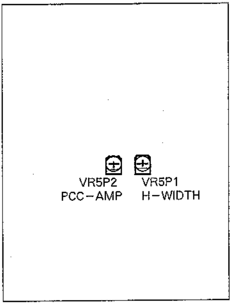
Déconnecter le cordon secteur de la prise 230 V AC, et court-circuiter les deux bornes du cordon. Mettre l'interrupteur secteur en position Marche et brancher un Ohmmètre entre l'une des bornes court-circuitées du cordon secteur et une quelconque partie métallique extérieure du poste (tête de vis, poignée, métallique etc.). Les parties métalliques extérieurement accessibles et ayant un chemin de retour au chassis, doivent avoir une résistance minimale de 1 Megohm. Une mesure en dessous de cette valeur indique une anomalie qui exige une intervention.


J3Y1
VR2Y1
SHARPNESS
S7Y2
S7Y1
TUNING

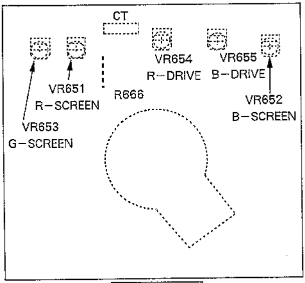
PCB—CONTROL


VR601
LEVEL—ADJ
L603
L608
L607
TP46B
TP46R
IC601
TP64
TP63
TP61
TP62
VC601
L606
L604
VC2
VC1

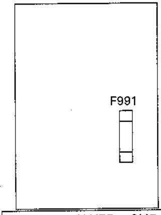
PCB—VC／RGB—CTI


VR5P2
PCC—AMP
VR5P1
H—WIDTH

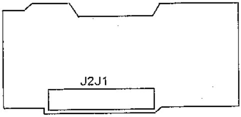
PCB—PCC <CT—2553FSM uniquement>


CT
VR654
R—DRIVE
VR655
B—DRIVE
VR651
R—SCREEN
R666
VR652
B—SCREEN
VR653
G—SCREEN

PCB—CRT



PCB—POWER—SUB



PCB—PERICONNNECTOR

RÈGLAGES

SUB CONT (VR201):

(1) Mettre le récepteur sur un signal PAL barres de couleurs.

(2) Régler le bouton contour (sharpness) en position médiane et appuyer sur le bouton "optimum". Régler le niveau de couleur en position minimum.

(3) Régler CRT-BIAS à l'aide de T553 pour que la partie de l'image noire d'une part et la barre de couleur bleue d'autre part soient à un niveau visuel normal.

(4) Connecter un ampèremètre DC (1 mA de déviation totale) entre les points test PT1 (+) et PT2 (−).

(5) Régler SUB CONT VR201 pour que le courant faisceau soit à 650 μA ±20μA.

RÉGLAGE DE LA HAUTEUR VERTICALE ET DE LA LINÉARITÉ (VR402, VR401):

S'assurer que la tension secteur est bien de 220V.

(1) Régler l'appareil sur un programme monochrome.

(2) Régler la hauteur verticale à l'aide de VR402 pour obtenir une hauteur d'image verticale d'approximativement 90%. <CT-2553FSM uniquement>

(3) Régler la linéarité verticale à l'aide de VR401 pour obtenir une linéarité verticale symétrique. <CT-2553FSM uniquement>

(4) Placer le bouton contour (sharpness) en position encliquetée et appuyer sur le bouton "optimum".

(5) Régler la hauteur à l'aide de VR402 de façon à obtenir une amplitude verticale normale.

RÉGLAGE DE LA STABILITÈ HORIZONTALE (VR502):

(1) Syntoniser l'apparcil sur une émission normale.

(2) Court-circuiter les points test TP8A et TP8B.

(3) Régler H-HOLD VR502 pour obtenir une image quasi synchronisée.

(4) Enlever le court-circuit de TP8A et TP8B.

CENTRAGE HORIZONTAL DE L'IMAGE (VR501)

(1) Syntoniser l'appareil sur une émission normale.

(2) Régler H-HOLD VR502 comme indiqué ci-dessus.

(3) Régler H-PHASE VR501 pour centrer l'image.

POSITION VERTICALE DE L'IMAGE (S401)

(1) Syntoniser l'appareil sur une émission normale.

(2) Positionner l'interrupteur V-POSITION S401 pour centrer l'image verticalement.

FOCUS

(1) Régler l'image sur une émission noir et blanc (mire si possible).

(2) Régler le bouton contour (sharpness) en position médiane et appuyer sur le bouton "optimum".

(3) Régler FOCUS T553 pour l'optimum de netteté de l'ensemble de l'image.

RÉGLAGE DE LA TENSION D'ALIMENTATION SECONDAIRE-DC SET (VR901) <CT-2153FSM uniquement>

(1) Régler le téléviseur sur un programme noir et blanc (mire).

(2) Régler le bouton contour (sharpness) en position médiane et appuyer sur le bouton "optimum".

(3) Contrôler que la tension secteur est à 220 V.

(4) Connecter un voltmètre (échelle 150 V) entre TP91 (+) et la masse (−).

(5) Régler DC-SET VR901 pour obtenir 117±3V.

RÉGLAGE DE LA POSITION DE VISUALISATION (VR701) DISPLAY POSITION

Ce réglage doit être effectué avoir terminé le réglage de VR501 (H-PHASE).

(1) Régler l'appareil sur une émission de mire TDF.

(2) Appuyer sur le bouton optimum et régler VR701 (display position) pour que la visualisation soit au milieu de l'écran (Fig. 4).

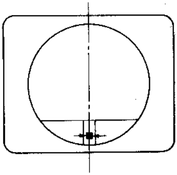


Fig.4 Position de visualisation

CIRCUITS CHROMINANCE

RÉGLAGE DE L'OSCILLATEUR (VC601)

(1) Mettre le récepteur sur un programme PAL.
(2) Brancher une résistance de 10KΩ entre la broche TP63 et la broche V_{CC}.
(3) Court-circuiter les points tests TP61 et TP62 (utiliser un fil court).
(4) Régler la fréquence libre à l'aide de VC601 pour obtenir une quasi sync, de couleur.
(5) Débrancher la résistance des points TP63 et V_{CC} et enlever le court-circuit des points tests TP61 et TP62.

RÉGLAGE VECTORIEL (L603, VR601)

Ne pas entreprendre ce réglage avant d'avoir effectivé celui de l'oscillateur (VC601).

(1) Syntoniser le téléviseur sur une mire TDF ou autre.
(2) Appuyer sur le bouton "OPTIMUM".
(3) Mettre l'oscillo en mode X-Y. Brancher la sonde de l'oscillo VOIE-X à TP46B (sortie B-Y) et la VOIE-Y à TP46R (sortie R-Y) pour visualiser la figure vectorielle.
(4) Régler L603 (TRANS DL) afin que les points doubles externes soient superposés uniformément.
(5) Régler VR601 LEVEL ADJ pour que les 2 points dans les axes des "x" soient confondus. Voir Fig. 5.

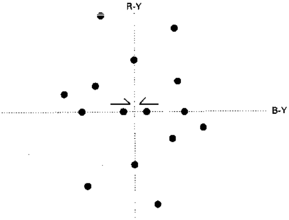


Fig. 5 Image vectorielle du signal de mire

CIRCUITS PAL

SORTIE COULEUR (VR202)

Cet ajustement sera realise après que les réglages vectoriel, echelle des gris et SUB-CONT aient ete finalisés.

(1) Connecter un signal barre de couleur PAL.
(2) Connecter l'oscilloscope en broche ③ du connecteur $\boxed{CT}$.
(3) Mettre le potentiometre "SHARPNESS" en position mediane et appuyer sur le bouton "OPTIMUM".
(4) Ajuster SUB-COLOUR VR202 afin d'obtenir un plat dans le haut du signal. (Voir Fig. 6)

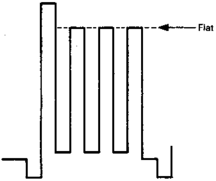


Fig. 6 Oscillogramme du signal chroma de sortie

CIRCUITS SECAM

Pendant le réglage des circuits SECAM, mettre le récepteur sur une mire de barres couleurs SECAM.

RÉGLAGE DU CIRCUIT CLOCHE (L604)

(1) Mettre la sonde sur la PIN ⑮ de IC601 et la masse (atténuation sonde 10/1).

(2) Régler L604 pour que l'amplitude du signal chroma soit égale sur deux lignes consécutives (fig. 7).

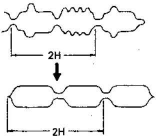


Fig. 7

SELF D'IDENTIFICATION (L606)

(1) Ce réglage doit être effectué après le réglage du circuit cloche.

(2) Brancher une résistance de 10kΩ entre à la pin ㉑ de IC601 et la broche Vcc.

(3) Brancher la sonde de l'oscillo à la pin ㉑ de IC601.
Sonde: 10:1

(4) Régler L606 pour lire un maximum sur le voltmètre.

RÉGLAGE VECTORIEL (L607, L608)

(1) Ce réglage doit être effectué après le réglage de la self d'identification L606.

(2) Mettre l'oscillo en mode X-Y. Brancher la sonde de la voie X sur TP46B et la sonde de la voie Y sur TP46R pour visualiser la figure vectorielle composée de points doubles.

(3) Observer les points lumineux au centre de l'écran, régler la self L607 (B-Y DEM) pour ramener les points se mouvant le long de l'axe horizontal X sur le point fixe au centre. Procéder de la même facon en réglant L608 (R-Y DEM) pour l'axe vertical Y comme indiqué sur la fig. 8.

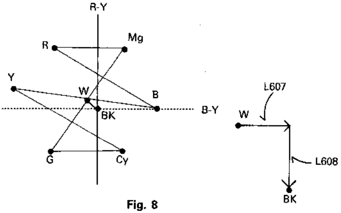


Fig. 8

ECHELLE DES GRIS

La procédure de réglage d'échelle des gris décrite ci-dessous peut être nécessaire lors du remplacement du tube cathodique ou du PCB-CRT.

(1) Mettre l'appareil en mode AV sans signal en entrée.

(2) Positionner les potentiomètres suivants comme indiqué ci-dessous:
Drive Control VR654 ot VR655:
à fond dans le sens inverse des aiguilles d'une montre.
SUB CONT VR201:
en position médiane.
T553 (sur le transfo THT):
à fond dans le sens inverse des aiguilles d'une montre

(3) Court-circuiter R666.

(4) Brancher la sonde de l'oscillo sur le collecteur de Q651 et Q653 successivement.
Brancher la masse de la sonde de l'oscillo sur la PIN ② du connecteur CT (masse).

(5) Régler les potentiomètres VR651 et VR653 successivement (screen) pour que le niveau pédestal de chaque collecteur soit aligné sur 150 V.

(6) Court-circuiter les bornes de service J140 ot J141 (on obtient une ligne horizontale sur l'écran).

(7) Régler le potentiomètre T553 (SCREEN control) sur le transfo THT pour qu'une ligne rouge, bleue ou verte commence à apparaitre.

(8) Régler soit VR651, soit VR652 soit VR653 afin que les deux autres lignes apparaissent de même intensité lumineuse.

(9) Enlever le court-circuit sur R666 ainsi que sur les bornes de service J140 et J141.

(10) Mettre l'appareil en conditions de réception normales (signal échelle des gris).

(11) Régler VR654 et VR655 (DRIVE Controls) pour obtenir une échelle de gris optimum.

AMPLITUDE HORIZONTALE ET CORRECTION EST/OUEST (PCB PCC) <VR5P1, VR5P2> (CT 2553 FSM uniquement)

(1) Régler le tuner sur un signal interne (mire de convergence)

(2) Régler le bouton coutour (Sharpness) en position médiane et appuyer sur le bouton "OPTIMUM"

(3) Observer chaque fin de ligne et ajuster VR5A2 (PCC AMP) pour un minimum de distortion Est-Ouest

(4) Régler le tuner sur un signal standard monoscope

(5) Ajuster VR5P1 afin d'obtenir une amplitude horizontale correcte

(6) Répéter les étapes précédentes si nécessaire

PARTS LIST FOR MODELS
CT－2153FSM／CT－2553FSM

In order to expedite delivery of replacement part orders.

Specify : 1.Model number／Serial number
2.Part number and Description
3.Quantity

Unless full information is supplied,delay in execution of orders will result.

⚠ : Critical components ○ : New Parts

RESISTOR		CAPACITOR			
MARK	TOLERANCE	MARK	TOLERANCE	MARK	TOLERANCE
J	±5%	J	±5%	Z	+80% −20%
K	±10%	K	±10%	C	±0.25pF
M	±20%	M	±20%	D	±0.5pF
N	±30%	P	+100% −0%	F	±1pF
				Q	+30% −10%

TUBES

SYMBOL NO.	PART NO.	DESCRIPTION
⚠V 271	255P917010	CATHODE RAY TUBE A51EBV12X01 (CT-2153FSM)
⚠V 271	255P914010	CATHODE RAY TUBE A59EAK01X1 (CT-2553FSM)

INTEGRATED CIRCUITS

SYMBOL NO.	PART NO.	DESCRIPTION
IC1A1	266P192020	LA7910
IC251	272P124010	NJM2209S
IC2A1	272P138010	LA7952
IC3A1	272P139010	LA7953
IC3A2	272P140010	LA4270
IC401	266P404010	UPC1378H (CT-2153FSM)
IC401	266P405010	AN5521 (CT-2553FSM)
IC501	272P147020	TDA2579A
IC601	272P171010	TDA4556 MSD
IC602	272P170010	TDA4565 CTI
IC603	272P169010	TA7676P RGB
IC701	272P090030	M50439-563SP
IC702	272P064010	M58630P
IC703	266P130030	PST520E
IC704	266P010020	μPC574J
IC901	267P921010	STR59041
IC902	266P934040	μPC7812H
IC951	266P922010	μPC78M05H

TRANSISTORS

SYMBOL NO.	PART NO.	DESCRIPTION
Q 1A1	260P543020	JC501-Q-R
Q 1A5	260P387010	2SC2236-OY
Q 202	260P543020	JC501-Q-R
Q 251	260P543020	JC501-Q-R
Q 252	260P543020	JC501-Q-R
Q 253	260P635010	2SC3065F/2SC3065G
Q 254	260P543020	JC501-Q-R
Q 2A1	260P543020	JC501-Q-R
Q 2A2	260P543020	JC501-Q-R
Q 2A3	260P543020	JC501-Q-R
Q 2A4	260P544050	JA101-Q.R
Q 2J1	260P543020	JC501-Q-R
Q 2J2	260P416030	2SC2274-F
Q 2J3	260P543020	JC501-Q-R
Q 2J4	260P543020	JC501-Q-R
Q 2J5	260P543020	JC501-Q-R
Q 3A1	260P543020	JC501-Q-R
Q 3A2	260P416030	2SC2274-F
Q 3A3	260P543020	JC501-Q-R
Q 401	260P544050	JA101-Q.R
Q 402	260P544050	JA101-Q.R
Q 551	260P510020	BF419
Q 552	260P607020	2SD1878
Q 5P1	260P631010	2SD1196 (CT-2553FSM)
Q 5P2	260P544050	JA101-Q.R (CT-2553FSM)
Q 5P3	260P543020	JC501-Q-R (CT-2553FSM)
Q 5P4	260P543020	JC501-Q-R (CT-2553FSM)
Q 601	260P543020	JC501-Q-R
Q 602	260P543020	JC501-Q-R
Q 651	260P425070	2SC2688-M.N
Q 652	260P425070	2SC2688-M.N
Q 653	260P425070	2SC2688-M.N
Q 654	260P544050	JA101-Q.R
Q 701	260P559050	2SC1740S-E
Q 702	260P543020	JC501-Q-R
Q 703	260P543020	JC501-Q-R
Q 704	260P543020	JC501-Q-R
Q 705	260P543020	JC501-Q-R
Q 706	260P544050	JA101-Q.R
Q 707	260P544050	JA101-Q.R
Q 901	260P387010	2SC2236-OY
Q 902	260P387010	2SC2236-OY
Q 951	260P610010	2SC4004
○ Q 953	260P559060	2SC1740S-S.E (CT-2153FSM)
Q 953	260P338050	2SC2603-G (CT-2553FSM)
Q 954	260P611010	2SD965-R
Q 955	260P543020	JC501-Q-R

DIODES

SYMBOL NO.	PART NO.	DESCRIPTION
D 1A3	264P370010	1N4148
D 1A6	264P464040	EQA02-10B
D 1A7	264P460030	EQA02-05EF/RD5.1EB3
D 201	264P370010	1N4148
D 202	264P370010	1N4148
D 251	264P460010	EQA02-05AB/RD4.7EB2
D 252	264P370010	1N4148
D 254	264P370010	1N4148
D 255	264P501060	HZ3CLL
D 256	264P370010	1N4148
D 257	264P370010	1N4148
D 258	264P370010	1N4148

SYMBOL NO.	PART NO.	DESCRIPTION
D 2A1	264P460020	EQA02-05CD/RD5.1EB1
D 2J1	264P370010	1N4148
D 2J7	264P077010	MC301
D 2J8	264P460030	EQA02-05EF/RD5.1EB3
D 2J9	264P458080	RD4.3EB1
D 3A1	264P370010	1N4148
D 3A2	264P370010	1N4148
D 3A3	264P465080	EQA02-13A/RD13EB3
D 401	264P374010	1N4003G
D 403	264P370010	1N4148
D 501	264P370010	1N4148
D 502	264P370010	1N4148
D 551	264P375010	BY228 (CT-2553FSM)
D 552	264P378020	BYW96E (CT-2553FSM)
D 553	264P377020	BYW95B
D 554	264P371010	BYD33G
D 555	264P374010	1N4003G
D 559	264P370010	1N4148
D 560	264P370010	1N4148
D 601	264P465040	EQA02-12AB
D 602	264P465040	EQA02-12AB
D 603	264P465040	EQA02-12AB
D 604	264P465040	EQA02-12AB
D 605	264P465040	EQA02-12AB
D 606	264P465040	EQA02-12AB
D 701	264P370010	1N4148
D 702	264P370010	1N4148
D 706	264P370010	1N4148
D 709	264P370010	1N4148
D 710	264P370010	1N4148
D 715	264P370010	1N4148
D 716	264P370010	1N4148
D 717	264P370010	1N4148
D 718	264P370010	1N4148
D 719	264P370010	1N4148
D 720	264P370010	1N4148
D 721	264P464080	EQA02-11C.D
D 722	264P464080	EQA02-11C.D
D 723	264P464080	EQA02-11C.D
D 724	264P464080	EQA02-11C.D
D 725	264P370010	1N4148
D 727	264P370010	1N4148
D 728	264P370010	1N4148
D 729	264P370010	1N4148
D 730	264P501050	HZ3BLL
D 731	264P370010	1N4148
D 732	264P370010	1N4148
D 733	264P370010	1N4148
D 734	264P370010	1N4148
D 7Y1	264P393010	LIGHT EMITTING DIODE SLC-26VR5
D 7Y2	264P370010	1N4148
D 7Y3	264P370010	1N4148
D 7Y4	264P370010	1N4148
D 7Y5	264P370010	1N4148
D 7Y6	264P370010	1N4148
D 7Y7	264P370010	1N4148
D 901	264P376010	BYW56
D 902	264P376010	BYW56
D 903	264P376010	BYW56
D 904	264P376010	BYW56
D 905	264P371010	BYD33G
D 906	264P371010	BYD33G
D 907	264P371010	BYD33G
D 908	264P371010	BYD33G
D 909	264P371010	BYD33G
D 910	264P372010	BYV96E
D 911	264P377020	BYW95B
D 912	264P378020	BYW96E
D 913	264P377020	BYW95B
D 952	264P372010	BYV96E
D 953	264P465060	EQA02-12B
D 954	264P371010	BYD33G
D 955	264P374010	1N4003G
D 956	264P374010	1N4003G
D 957	264P470010	EQA02-30AC/RD30EB3.
D 958	264P370010	1N4148

OTHER SEMICONDUCTORS

SYMBOL NO.	PART NO.	DESCRIPTION
RP901	265P071060	POSITIVE THERMISTOR PTH451C161BG180N (CT-2153FSM)
RP901	265P071050	POSITIVE THERMISTOR PTH451C41BG180N (CT-2553FSM)

FILTERS

SYMBOL NO.	PART NO.	DESCRIPTION
CF201	296P085010	CERAMIC TRAP
CF701	299P046010	CERAMIC RESONATOR

DELAY LINES

SYMBOL NO.	PART NO.	DESCRIPTION
DL601	337P027050	DELAY LINE

COILS

SYMBOL NO.	PART NO.	DESCRIPTION		
⚠	409B041040	DEGAUSSING		(CT-2153FSM)
⚠	409B041050	DEGAUSSING		(CT-2553FSM)
L 251	349P165010	LF	150 μ H-K	
L 252	325C167020	PEAKING	56 μ H-J	
L 2A1	325C101040	PEAKING	12 μ H-K	
L 2J1	325C105080	PEAKING	3.9 μ H-J	
L 551	321C030010	RF	1 μ H-K	
L 553	411D009020	FERRITE CORE FILTER		
L 555	409P006080	FILTER		
L 556	333P012030	H-LIN.		(CT-2153FSM)
L 556	333P012010	H-LIN.		(CT-2553FSM)
L 557	325C121030	PEAKING	10 μ H-K	
L 5P1	409P408010	PCC		(CT-2553FSM)
L 5P2	409P407010	BRIDGE		(CT-2553FSM)
L 601	321C031040	RF	10 μ H-K	

< CT – 2153FSM／CT – 2553FSM >

SYMBOL NO.	PART NO.	DESCRIPTION
L 602	325C106040	PEAKING 12μH-J
L 603	349P173010	DEMODULATOR
L 604	349P172010	BELL FILTER
L 605	325C166060	PEAKING 18μH-J
L 606	349P174010	IDENT
L 607	349P173010	DEMODULATOR
L 608	349P173010	DEMODULATOR
L 609	325C167020	PEAKING 56μH-J
L 610	325C167010	PEAKING 47μH-J
L 701	325C122010	PEAKING 47μH-K
L 702	325C122010	PEAKING 47μH-K
L 703	325C122010	PEAKING 47μH-K
L 704	325C122010	PEAKING 47μH-K
L 705	325C111030	PEAKING 10μH-K
L 706	325C111030	PEAKING 10μH-K
L 707	325C121030	PEAKING 10μH-K
L 902	325D059060	PEAKING 390μH-K
L 904	411P001070	FERRITE LEAD
L 905	411P001070	FERRITE LEAD
L 994	351P047020	LINE FILTER

TRANSFORMERS

T 551	336P009010	H. DRIVE
○⚠T 553	334B081030	FLYBACK 〈CT-2153FSM〉
⚠T 553	334B081080	FLYBACK 〈CT-2553FSM〉
⚠T 901	350P369030	POWER 〈CT-2153FSM〉
⚠T 901	350P369050	POWER 〈CT-2553FSM〉
⚠T 951	350P375020	POWER 〈CT-2153FSM〉
⚠T 951	350P375010	POWER 〈CT-2553FSM〉

VARIABLE RESISTORS

VR201	127C081020	VR-SEMIFIXED 1/5W B100KΩ-M
VR202	127C081010	VR-SEMIFIXED 1/5W B50KΩ-M
VR2Y1	120C346020	VR-PCB 1/20W B10KΩ-20TM CS
VR401	127C081040	VR-SEMIFIXED 1/10W 300KΩ-M 〈CT-2553FSM〉
VR402	127C081030	VR-SEMIFIXED 1/10W B200KΩ-N
VR501	127C081010	VR-SEMIFIXED 1/5W B50KΩ-M
VR502	127C080080	VR-SEMIFIXED 1/5W B10KΩ-M
VR5P1	127C080070	VR-SEMIFIXED 1/5W B5KΩ-M 〈CT-2553FSM〉
VR5P2	127C080090	VR-SEMIFIXED 1/5W B20KΩ-M 〈CT-2553FSM〉
VR601	127C080010	VR-SEMIFIXED 1/5W B200Ω-M
VR651	127C020070	VR-SEMIFIXED 1/5W B5KΩ-N
VR652	127C020070	VR-SEMIFIXED 1/5W B5KΩ-N
VR653	127C020070	VR-SEMIFIXED 1/5W B5KΩ-N
VR654	127C020040	VR-SEMIFIXED 1/5W B1KΩ-N
VR655	127C020040	VR-SEMIFIXED 1/5W B1KΩ-N
VR701	127C080070	VR-SEMIFIXED 1/5W B5KΩ-M
VR901	127C081020	VR-SEMIFIXED 1/5W B100KΩ-M 〈CT-2153FSM〉

RESISTORS

SYMBOL NO.	PART NO.	DESCRIPTION
⚠R 386	103P378060	FUSE 1/4W 3.3Ω-J
⚠R 387	103P378060	FUSE 1/4W 3.3Ω-J
R 551	102P173030	CEMENT METAL 5W 4.7KΩ-K 〈CT-2153FSM〉
R 556	102P083090	CEMENT WIRE 10W 12Ω-K 〈CT-2153FSM〉
R 556	102P082090	CEMENT WIRE 10W 10Ω-K 〈CT-2553FSM〉
⚠R 559	103P378040	FUSE 1/4W 2.2Ω-J
⚠R 563	103P397090	FUSE 1/2W 0.82Ω-J
⚠R 565	103P442020	FUSE METAL 1W 560Ω-K 〈CT-2153FSM〉
⚠R 566	103P442020	FUSE METAL 1W 560Ω-K 〈CT-2553FSM〉
○⚠R 671	103P437090	FUSE METAL 2W 0.82Ω-K 〈CT-2153FSM〉
R 901	102P080040	CEMENT WIRE 5W 4.7Ω-K
⚠R 911	103P370070	FUSE 1/4W 33Ω-J 〈CT-2153FSM〉
⚠R 911	103P371020	FUSE 1/4W 82Ω-J 〈CT-2553FSM〉
⚠R 975	103P391080	FUSE 1/2W 270Ω-J

CAPACITORS AND TRIMMERS

⚠C 901	189P091010	CERAMIC CAPACITOR AC400V E4700PF-M
⚠C 902	189P091010	CERAMIC CAPACITOR AC400V E4700PF-M
⚠C 903	189P067040	CERAMIC-AC FZ VA1 0.01μF-P
C 907	185D059030	ELECTROLYTIC-C H385V/H400V 150μF-M
⚠C 991	189P033050	C-M-MF/PP-AC AC125V/250V 0.1μF-M
VC601	202P109030	TRIMMER CAPACITOR 5.5PF-30PF

SWITCHES

S 3J1	432C031010	PUSH
S 401	434C021010	LEVER
S 7Y1	432C031010	PUSH
S 7Y2	129C129040	VR-BLOCK SWX14 L=21.5
S 991	432P076010	PUSH

MISCELLANEOUS

	451C098010	JACK AERIAL
○⚠	449C081090	CRT SOCKET 〈CT-2153FSM〉
○⚠	449C081010	CRT SOCKET 〈CT-2553FSM〉
⚠F 901	283D047030	FUSE T1.6A
⚠F 991	283D047040	FUSE 2A-T
IP1A1	295P186020	DUAL HF-PACK TBGZ1-073A
J 2J1	451C059010	CONNECTOR
J 3Y1	451C082010	MICROPHONE JACK
⚠PC951	268P039010	PHOTO COUPLER ON3105-V
SP391	480P638030	SPEAKER
SP392	480P638030	SPEAKER
X 601	285P068020	CRYSTAL RESONATOR 8.8MHz
Z 701	939P226010	PREAMP UNIT
⚠Z 901	299P087050	PROTECTOR
⚠Z 903	299P087060	PROTECTOR

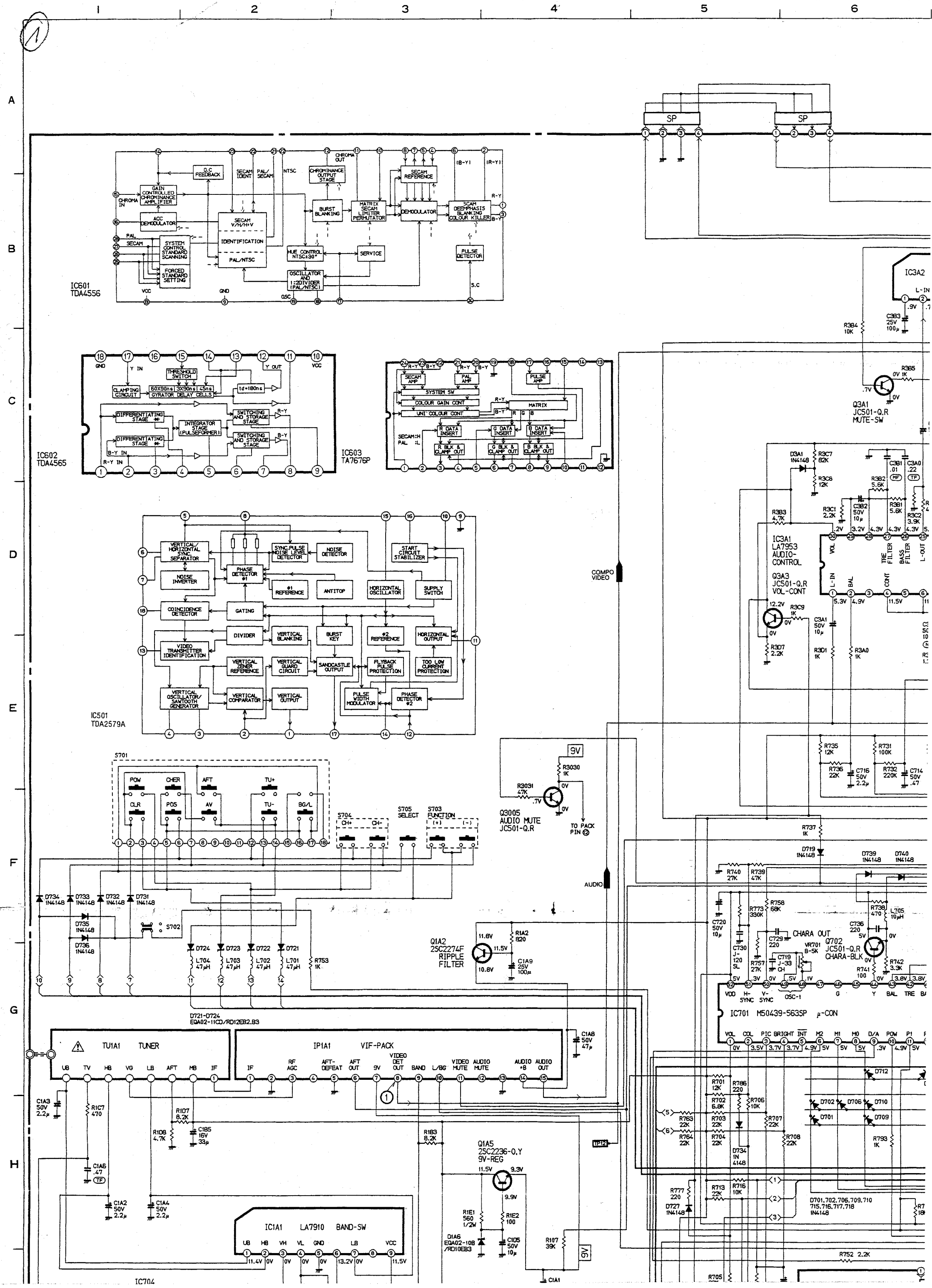
PRINTED CIRCUIT BOARD ASSY'S

⚠	930C210020	AV-S PCB ASSY
○⚠	920D222060	CONTROL PCB ASSY 〈CT-2553FSM〉
○⚠	920D217070	CONTROL PCB ASSY 〈CT-2153FSM〉
○⚠	930C266040	CRT PCB ASSY 〈CT-2153FSM〉
○⚠	920D177080	CRT PCB ASSY 〈CT-2553FSM〉
○⚠	920A343060	MAIN PCB ASSY 〈CT-2153FSM〉
○⚠	920A343070	MAIN PCB ASSY 〈CT-2553FSM〉
⚠	930C205020	PCC PCB ASSY 〈CT-2553FSM〉
○⚠	920D218050	PERICONNECTOR PCB ASSY 〈CT-2553FSM〉
○⚠	920D218030	PERICONNECTOR PCB ASSY 〈CT-2153FSM〉

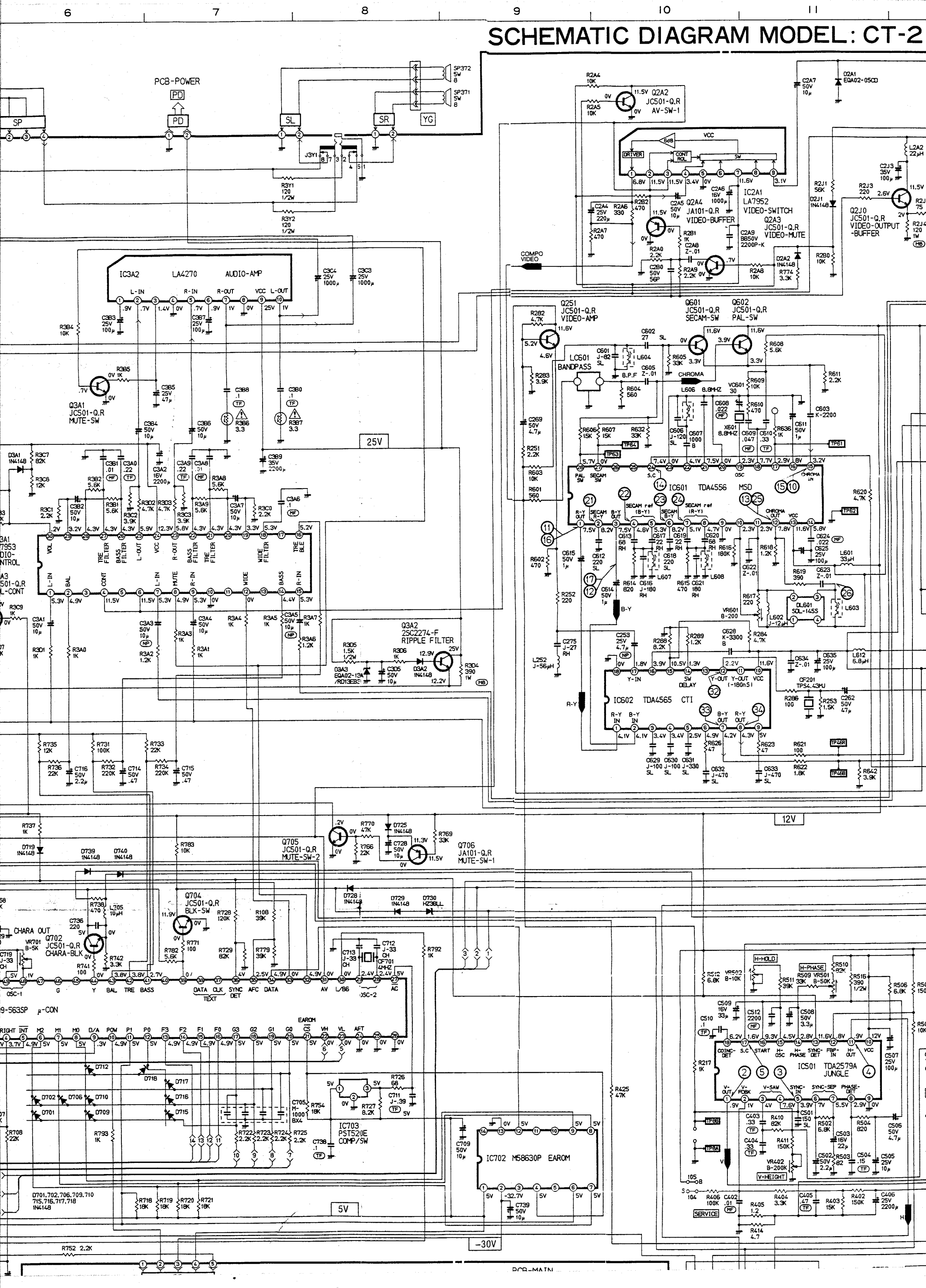
[21] : CT – 21M1FM   [25] : CT – 25M1FM

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
		TUBES		
⚠V 271	255P801010	CRT ASSY	A51EAL55X01	[21]
⚠V 271	255P914010	CRT ASSY	A59EAK01X1	[25]
		INTEGRATED CIRCUITS		
IC1A1	266P192020	IC	LA7910	
IC2A1	272P138010	IC	LA7952	
IC3A1	272P139010	IC	LA7953	
IC3A2	272P140010	IC	LA4270	
IC401	272P167010	IC	μPC 1488H	[21]
IC401	272P174010	IC	μPC 1498H	[25]
IC501	272P147020	IC	TDA2579A	
IC5001	272P406010	IC	TEA2031A	[25]
IC601	272P171010	IC	TDA4556 MSD	
IC602	272P170010	IC	TDA4565 CTI	
IC603	272P169010	IC	TA7676P RGB	
IC701	272P090030	IC	M50439-563SP	
IC702	272P064010	IC	M58630P	
IC703	266P130030	IC	PST520E	
IC704	266P010020	IC	μPC574J-K	
IC901	272P514010	IC	TEA2261	
IC952	266P922010	IC	μPC78M05H	
IC953	267P076010	IC	SI-3120C	
		TRANSISTORS		
Q 1A1	260P543050	TRANSISTOR	JC501-Q	
Q 1A2	260P416030	TRANSISTOR	2SC2274-F	
Q 1A5	260P387030	TRANSISTOR	2SC2236-Y	
Q 202	260P543050	TRANSISTOR	JC501-Q	
Q 251	260P543050	TRANSISTOR	JC501-Q	
Q 252	260P543050	TRANSISTOR	JC501-Q	
Q 253	260P635010	TRANSISTOR	2SC3065F/2SC3065G	
Q 2A2	260P543050	TRANSISTOR	JC501-Q	
Q 2A3	260P543050	TRANSISTOR	JC501-Q	
Q 2A4	260P544030	TRANSISTOR	JA101-Q	
Q 2J0	260P543050	TRANSISTOR	JC501-Q	
Q 2J1	260P544030	TRANSISTOR	JA101-Q	
Q 2J2	260P543050	TRANSISTOR	JC501-Q	
Q 2J3	260P543050	TRANSISTOR	JC501-Q	
Q 2J4	260P543050	TRANSISTOR	JC501-Q	
Q 2J5	260P543050	TRANSISTOR	JC501-Q	
Q 3A1	260P543050	TRANSISTOR	JC501-Q	
Q 3A2	260P416030	TRANSISTOR	2SC2274-F	
Q 3A3	260P543050	TRANSISTOR	JC501-Q	
Q 3005	260P543050	TRANSISTOR	JC501-Q	
Q 401	260P544030	TRANSISTOR	JA101-Q	
Q 402	260P544030	TRANSISTOR	JA101-Q	[25]
Q 551	260P422010	TRANSISTOR	2SC2482	
Q 552	260P607010	TRANSISTOR	2SD1878	
Q 5000	260P543050	TRANSISTOR	JC501-Q	[25]
Q 601	260P543050	TRANSISTOR	JC501-Q	
Q 602	260P543050	TRANSISTOR	JC501-Q	
Q 651	260P425040	TRANSISTOR	2SC2688-M, N	
Q 652	260P425040	TRANSISTOR	2SC2688-M, N	
Q 653	260P425040	TRANSISTOR	2SC2688-M, N	
Q 654	260P544030	TRANSISTOR	JA101-Q	
Q 701	260P559060	TRANSISTOR	2SC1740S-S, E	
Q 702	260P543050	TRANSISTOR	JC501-Q	
Q 704	260P543050	TRANSISTOR	JC501-Q	
Q 705	260P543050	TRANSISTOR	JC501-Q	
Q 706	260P544030	TRANSISTOR	JA101-Q	
Q 901	260P663010	TRANSISTOR	2SD1887	
Q 902	260P543050	TRANSISTOR	JC501-Q	
Q 951	260P543050	TRANSISTOR	JC501-Q	
Q 952	260P668010	TRANSISTOR	2SB1135-R, S	
Q 953	260P543050	TRANSISTOR	JC501-Q	
		DIODES		
D 1A0	264P370010	DIODE	1N4148	
D 1A6	264P464040	DIODE	EQA02-10B	
D 201	264P370010	DIODE	1N4148	
D 202	264P370010	DIODE	1N4148	
D 252	264P370010	DIODE	1N4148	
D 254	264P370010	DIODE	1N4148	
D 255	264P501060	DIODE	HZ3CLL	
D 256	264P370010	DIODE	1N4148	
D 257	264P370010	DIODE	1N4148	
D 258	264P370010	DIODE	1N4148	
D 2A1	264P483080	DIODE	RD5. 1FB2	
D 2A2	264P370010	DIODE	1N4148	
D 2J1	264P370010	DIODE	1N4148	
D 3A1	264P370010	DIODE	1N4148	
D 3A2	264P370010	DIODE	1N4148	
D 3A3	264P465080	DIODE	EQA02-13A/RD13EB3	
D 401	264P374020	DIODE	IN4003ID	
D 403	264P370010	DIODE	1N4148	[25]
D 411	264P370010	DIODE	1N4148	[25]
D 501	264P370010	DIODE	1N4148	
D 502	264P370010	DIODE	1N4148	
D 551	264P375020	DIODE	BY228	[25]
D 552	264P378010	DIODE	BYW96E	[25]
D 553	264P377010	DIODE	BYW95B	
D 554	264P371010	DIODE	BYD33G	
D 555	264P374020	DIODE	IN4003ID	
D 559	264P370010	DIODE	1N4148	
D 560	264P370010	DIODE	1N4148	
D 5000	264P370010	DIODE	1N4148	[25]
D 601	264P488020	DIODE	RD13ED1	
D 603	264P488020	DIODE	RD13ED1	
D 606	264P488020	DIODE	RD13ED1	
D 610	264P370010	DIODE	1N4148	
D 701	264P370010	DIODE	1N4148	
D 702	264P370010	DIODE	1N4148	
D 706	264P370010	DIODE	1N4148	
D 709	264P370010	DIODE	1N4148	
D 710	264P370010	DIODE	1N4148	
D 715	264P370010	DIODE	1N4148	
D 716	264P370010	DIODE	1N4148	

①

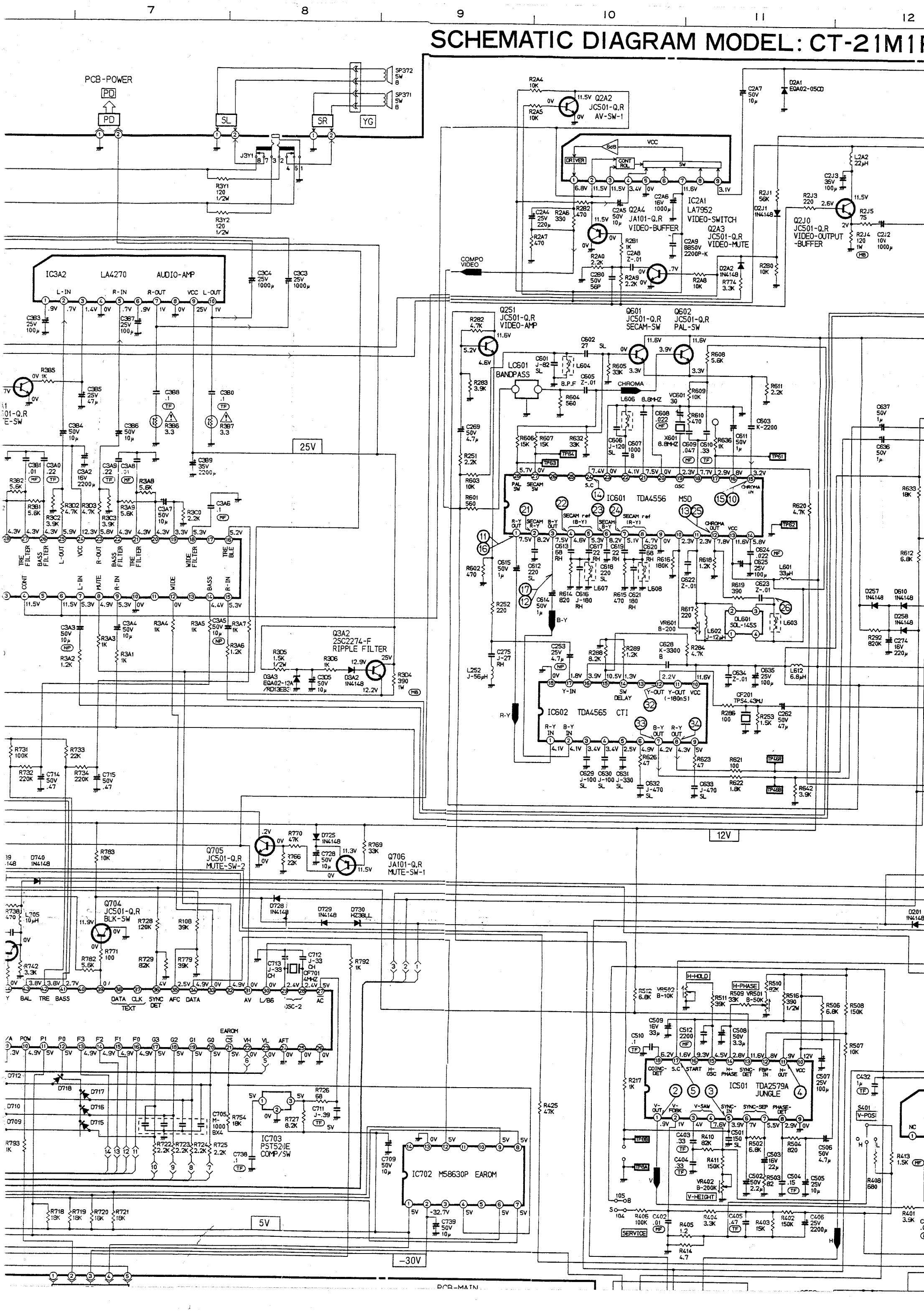

1
2
3
4
5
6
A
B
C
D
E
F
G
H
SP
SP
IC601
TDA4556
GAIN CONTROLLED CHROMINANCE AMPLIFIER
ACC DEMODULATOR
SYSTEM CONTROL STANDARD SCANNING
FORCED STANDARD SETTING
D.C FEEDBACK
SECAM V/H/H+V
IDENTIFICATION
PAL/NTSC
CHROMINANCE OUTPUT STAGE
BURST BLANKING
MATRIX SECAM LIMITER PERMUTATOR
SECAM REFERENCE
DEMODULATOR
SCAM DEEMPHASIS BLANKING COLOUR KILLER
HUE CONTROL NTSC±30°
SERVICE
PULSE DETECTOR
OSCILLATOR AND 1:2DIVIDER (PAL/NTSC)
CHROMA IN
CHROMA OUT
PAL
SECAM
NTSC
VCC
GND
OSC
S.C
R-Y
B-Y
IC602
TDA4565
Y IN
Y OUT
THRESHOLD SWITCH
CLAMPING CIRCUIT
60X90ns 3X90ns 45ns GYRATOR DELAY CELLS
td=180ns
DIFFERENTIATING STAGE
INTEGRATOR STAGE (PULSEFORMER)
SWITCHING AND STORAGE STAGE
IC603
TA7676P
SECAM AMP
PAL AMP
PULSE AMP
SYSTEM SW
COLOUR GAIN CONT
UNI COLOUR CONT
MATRIX
R DATA INSERT
G DATA INSERT
B DATA INSERT
R BLK & CLAMP OUT
G BLK & CLAMP OUT
B BLK & CLAMP OUT
SECAM:H
PAL :L
IC501
TDA2579A
VERTICAL/HORIZONTAL SYNC. SEPARATOR
NOISE INVERTER
PHASE DETECTOR #1
SYNC.PULSE NOISE LEVEL DETECTOR
NOISE DETECTOR
START CIRCUIT STABILIZER
#1 REFERENCE
ANTITOP
HORIZONTAL OSCILLATOR
SUPPLY SWITCH
COINCIDENCE DETECTOR
GATING
VIDEO TRANSMITTER IDENTIFICATION
DIVIDER
VERTICAL BLANKING
BURST KEY
#2 REFERENCE
HORIZONTAL OUTPUT
VERTICAL ZENER REFERENCE
VERTICAL GUARD CIRCUIT
SANDCASTLE OUTPUT
FLYBACK PULSE PROTECTION
TOO LOW CURRENT PROTECTION
VERTICAL OSCILLATOR/SAWTOOTH GENERATOR
VERTICAL COMPARATOR
VERTICAL OUTPUT
PULSE WIDTH MODULATOR
PHASE DETECTOR #2
S701
POW
CHER
AFT
TU+
CLR
POS
AV
TU-
BG/L
S704
CH+
CH-
S705
SELECT
S703
FUNCTION
(+)
(-)
S702
D734 1N4148
D733 1N4148
D732 1N4148
D731 1N4148
D735 1N4148
D736 1N4148
D724
D723
D722
D721
L704 47μH
L703 47μH
L702 47μH
L701 47μH
R753 1K
D721-D724
EQA02-11CD/RD12EB2,B3
9V
R3030 1K
R3031 47K
Q3005
AUDIO MUTE
JC501-Q.R
TO PACK PIN ⑫
COMPO VIDEO
AUDIO
Q1A2
2SC2274F
RIPPLE FILTER
R1A2 820
C1A9 25V 100μ
11.6V
11.5V
10.8V
TU1A1 TUNER
UB
TV
HB
VG
LB
AFT
MB
IF
IP1A1 VIF-PACK
RF AGC
AFT-DEFEAT
AFT OUT
9V
VIDEO DET OUT
BAND
L/BG
VIDEO MUTE
AUDIO MUTE
AUDIO +B
AUDIO OUT
C1A8 50V 47μ
C1A3 50V 2.2μ
R1C7 470
R107 8.2K
R108 4.7K
C185 16V 33μ
R183 8.2K
C1A6 .47
C1A2 50V 2.2μ
C1A4 50V 2.2μ
Q1A5
2SC2236-O.Y
9V-REG
9.3V
9.9V
R1E1 560 1/2W
R1E2 100
D1A6
EQA02-10B/RD10EB3
C105 50V 10μ
R107 39K
IC1A1 LA7910 BAND-SW
GND
VCC
11.4V
13.2V
IC704
C1A1
TP12
IC3A2
L-IN
R384 10K
C383 25V 100μ
R385 1K
Q3A1
JC501-Q.R
MUTE-SW
D3A1 1N4148
R3C7 82K
R3C6 12K
R383 4.7K
IC3A1
LA7953
AUDIO-CONTROL
Q3A3
JC501-Q.R
VOL-CONT
R3C9 1K
C3A1 50V 10μ
R3D7 2.2K
R3D1 1K
R3A0 1K
R3C1 2.2K
C382 50V 10μ
R382 5.6K
R381 5.6K
R3C2 3.9K
C381 .01
C3A0 .22
VOL
TRE FILTER
BASS FILTER
L-OUT
BAL
CONT
R735 12K
R736 22K
C716 50V 2.2μ
R731 100K
R732 220K
C714 50V .47
R737 1K
D719 1N4148
D739 1N4148
D740 1N4148
R740 27K
R739 47K
R738 470
L705 10μH
C720 50V 10μ
R773 330K
R758 68K
C730 J-120 SL
C729 220
C719 J-33 CH
VR701 B-5K
R757 27K
CHARA OUT
C736 220
Q702
JC501-Q.R
CHARA-BLK
R742 3.3K
R741 100
VDD
H-SYNC
V-SYNC
OSC-1
G
Y
BAL
TRE
IC701 M50439-563SP μ-CON
VOL
COL
PIC
BRIGHT
INT
M2
M1
M0
D/A
POW
P1
R701 12K
R702 6.8K
R703 22K
R704 22K
R763 22K
R764 22K
R786 220
R706 10K
R707 22K
R708 22K
D734 1N 4148
D712
D702
D706
D710
D701
D709
R793 1K
R777 220
D727 1N4148
R713 22K
R716 10K
D701,702,706,709,710
715,716,717,718
1N4148
R752 2.2K
R705

SCHEMATIC DIAGRAM MODEL: CT-2

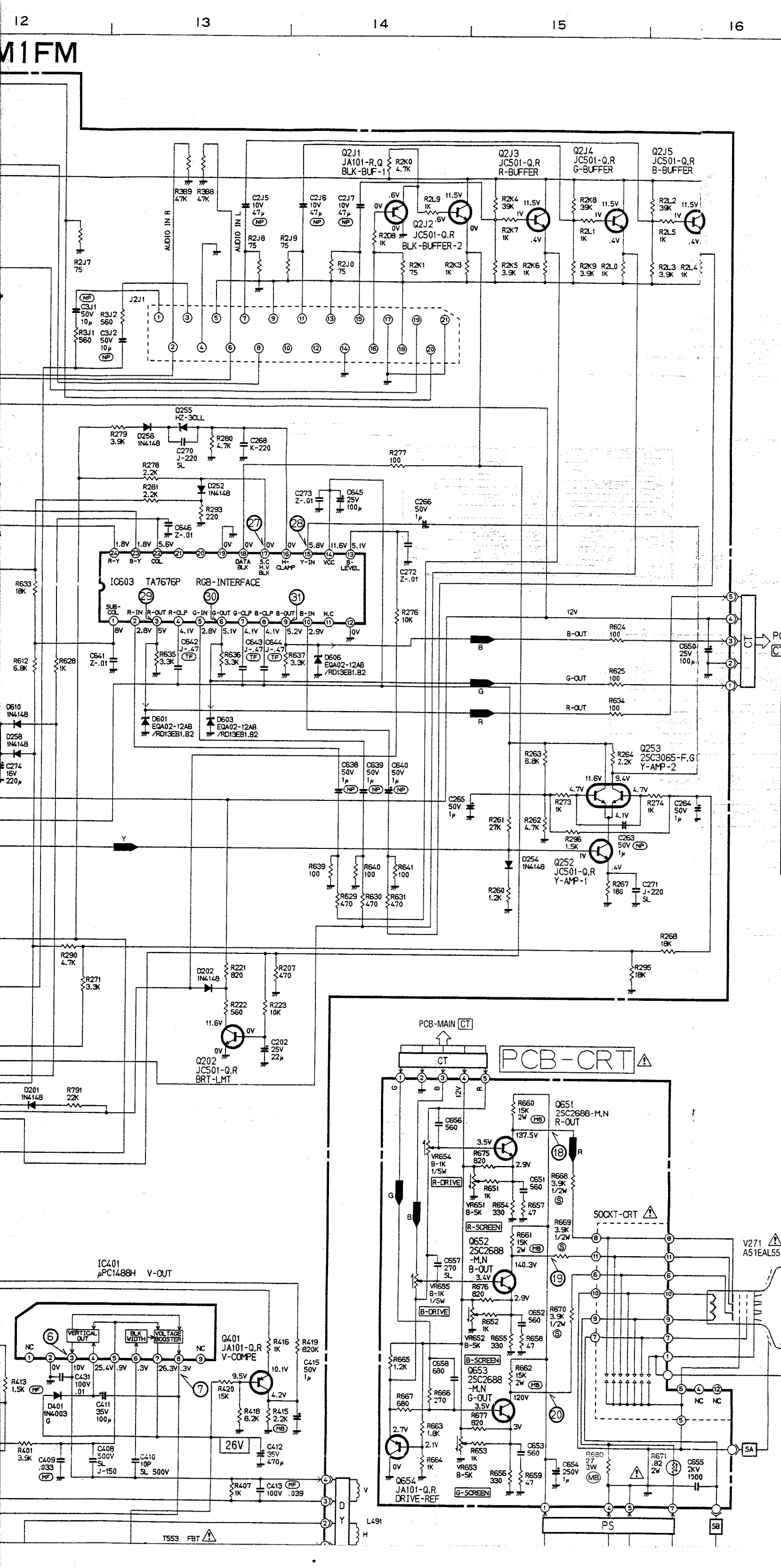


6
7
8
9
10
11
PCB-POWER
PD
SP
SL
SR
YG
SP372 5W 8
SP371 5W 8
J3Y1
IC3A2 LA4270 AUDIO-AMP
Q3A1 JC501-Q.R MUTE-SW
25V
IC3A1 LA7953 AUDIO-CONTROL
Q3A2 2SC2274-F RIPPLE FILTER
Q2A2 JC501-Q.R AV-SW-1
IC2A1 LA7952 VIDEO-SWITCH
Q2A4 JA101-Q.R VIDEO-BUFFER
Q2A3 JC501-Q.R VIDEO-MUTE
Q2J0 JC501-Q.R VIDEO-OUTPUT -BUFFER
COMPO VIDEO
Q251 JC501-Q.R VIDEO-AMP
Q601 JC501-Q.R SECAM-SW
Q602 JC501-Q.R PAL-SW
LC601 BANDPASS
CHROMA
IC601 TDA4556 MSD
IC602 TDA4565 CTI
DL601 SOL-145S
CF201 TPS4.43MJ
B-Y
R-Y
12V
Q705 JC501-Q.R MUTE-SW-2
Q706 JA101-Q.R MUTE-SW-1
Q704 JC501-Q.R BLK-SW
Q702 JC501-Q.R CHARA-BLK
CHARA OUT
μ-CON
IC703 PST520E COMP/SW
IC702 M58630P EAROM
D701,702,706,709,710 715,716,717,718 1N4148
5V
-30V
H-HOLD
H-PHASE
V-HEIGHT
SERVICE
IC501 TDA2579A JUNGLE
PCB-MAIN

SCHEMATIC DIAGRAM MODEL: CT-21M1



7
8
9
10
11
12
PCB-POWER
PD
SL
SR
YG
SP372 5W 8
SP371 5W 8
J3Y1
R3Y1 120 1/2W
R3Y2 120 1/2W
IC3A2 LA4270 AUDIO-AMP
L-IN
R-IN
R-OUT
VCC
L-OUT
C3C4 25V 1000μ
C3C3 25V 1000μ
25V
IC3A1
TRE FILTER
BASS FILTER
L-OUT
VCC
R-OUT
BASS FILTER
TRE FILTER
WIDE FILTER
TRE BLE
CONT
L-IN
MUTE
R-IN
WIDE
BASS
R-IN
Q3A2 2SC2274-F RIPPLE FILTER
D3A3 EQA02-13A /RD13EB3
D3A2 1N4148
R3D4 390 1W
R2A4 10K
Q2A2 JC501-Q,R AV-SW-1
R2A5 10K
C2A7 50V 10μ
D2A1 EQA02-05CD
6dB
VCC
DRIVER
CONT ROL
SW
IC2A1 LA7952 VIDEO-SWITCH
Q2A4 JA101-Q,R VIDEO-BUFFER
Q2A3 JC501-Q,R VIDEO-MUTE
C2A9 B850V 2200P-K
D2A2 1N4148
R774 3.3K
R2A8 10K
COMPO VIDEO
L2A2 22μH
C2J3 35V 100μ
R2J1 56K
D2J1 1N4148
R2J3 220
Q2J0 JC501-Q,R VIDEO-OUTPUT -BUFFER
R2J5 75
R2J4 120 1W
C2J2 10V 1000μ
R280 10K
Q251 JC501-Q,R VIDEO-AMP
Q601 JC501-Q,R SECAM-SW
Q602 JC501-Q,R PAL-SW
LC601 BANDPASS
L604
B.P.F
CHROMA
L606 8.8MHZ
VC601 30
X601 8.8MHZ
TP61
TP62
TP63
TP64
IC601 TDA4556 MSD
PAL SW
SECAM SW
R-Y OUT
SECAM R-Y
B-Y OUT
SECAM ref (B-Y)
SECAM B-Y
SECAM ref (R-Y)
CHROMA OUT
CHROMA IN
VCC
L607
L608
DL601 SOL-1455
L602 12μH
L603
L601 33μH
VR601 B-200
B-Y
R-Y
L252 J-56μH
IC602 TDA4565 CTI
Y-IN
SW DELAY
Y-OUT
Y-OUT (-180nS)
VCC
R-Y IN
B-Y IN
B-Y OUT
R-Y OUT
CF201 TPS4.43MJ
L612 6.8μH
TP46R
TP46B
12V
Q705 JC501-Q,R MUTE-SW-2
Q706 JA101-Q,R MUTE-SW-1
D725 1N4148
Q704 JC501-Q,R BLK-SW
D740 1N4148
D728 1N4148
D729 1N4148
D730 HZ38LL
L705 10μH
CF701 4MHZ
BAL
TRE
BASS
DATA
CLK
SYNC
AFC
DATA
TEXT
DET
AV
L/B6
OSC-2
AC
POW
P1
P0
F3
F2
F1
F0
G3
G2
G1
G0
EAROM CS
VH
VL
AFT
D718
D717
D716
D715
IC703 PST520E COMP/SW
IC702 M58630P EAROM
5V
-30V
-32.7V
PCB-MAIN
H-HOLD
VR502 B-10K
H-PHASE
VR501 B-50K
IC501 TDA2579A JUNGLE
COINC-DET
S.C
START
H-OSC
H-PHASE
SYNC-DET
FBP-IN
H-OUT
VCC
V-OUT
V-FDBK
V-SAW
SYNC-IN
SYNC-SEP
PHASE-DET
VR402 B-200K
V-HEIGHT
SERVICE
TP88
TP8A
S401 V-POSI
D257 1N4148
D610 1N4148
D258 1N4148
D201 1N4148


12
13
14
15
16
17
18
M1FM
Q2J1 JA101-R,Q BLK-BUF-1
Q2J2 JC501-Q,R BLK-BUFFER-2
Q2J3 JC501-Q,R R-BUFFER
Q2J4 JC501-Q,R G-BUFFER
Q2J5 JC501-Q,R B-BUFFER
AUDIO IN R
AUDIO IN L
J2J1
IC603 TA7676P RGB-INTERFACE
R-Y
B-Y
COL
DATA BLK
S.C H.V BLK
H-CLAMP
Y-IN
VCC
B-LEVEL
SUB-COL
R-IN
R-OUT
R-CLP
G-IN
G-OUT
G-CLP
B-CLP
B-OUT
B-IN
N.C
D255 HZ-3CLL
D601 EQA02-12AB /RD13EB1.B2
D603 EQA02-12AB /RD13EB1.B2
D606 EQA02-12AB /RD13EB1.B2
12V
B-OUT
G-OUT
R-OUT
PCB-CRT
CT
Q253 2SC3065-F,G Y-AMP-2
Q252 JC501-Q,R Y-AMP-1
Y
Q202 JC501-Q,R BRT-LMT
IC401 μPC1488H V-OUT
VERTICAL OUT
BLK WIDTH
VOLTAGE BOOSTER
Q401 JA101-Q,R V-COMPE
26V
T553 FBT
D
Y
L491
V
H
PCB-MAIN CT
PCB-CRT
Q651 2SC2688-M,N R-OUT
Q652 2SC2688 -M,N B-OUT
Q653 2SC2688 -M,N G-OUT
Q654 JA101-Q,R DRIVE-REF
R-DRIVE
R-SCREEN
B-DRIVE
B-SCREEN
G-SCREEN
SOCKT-CRT
V271 A51EAL55X01
PS
5A
5B

SERVING PRECAUTION

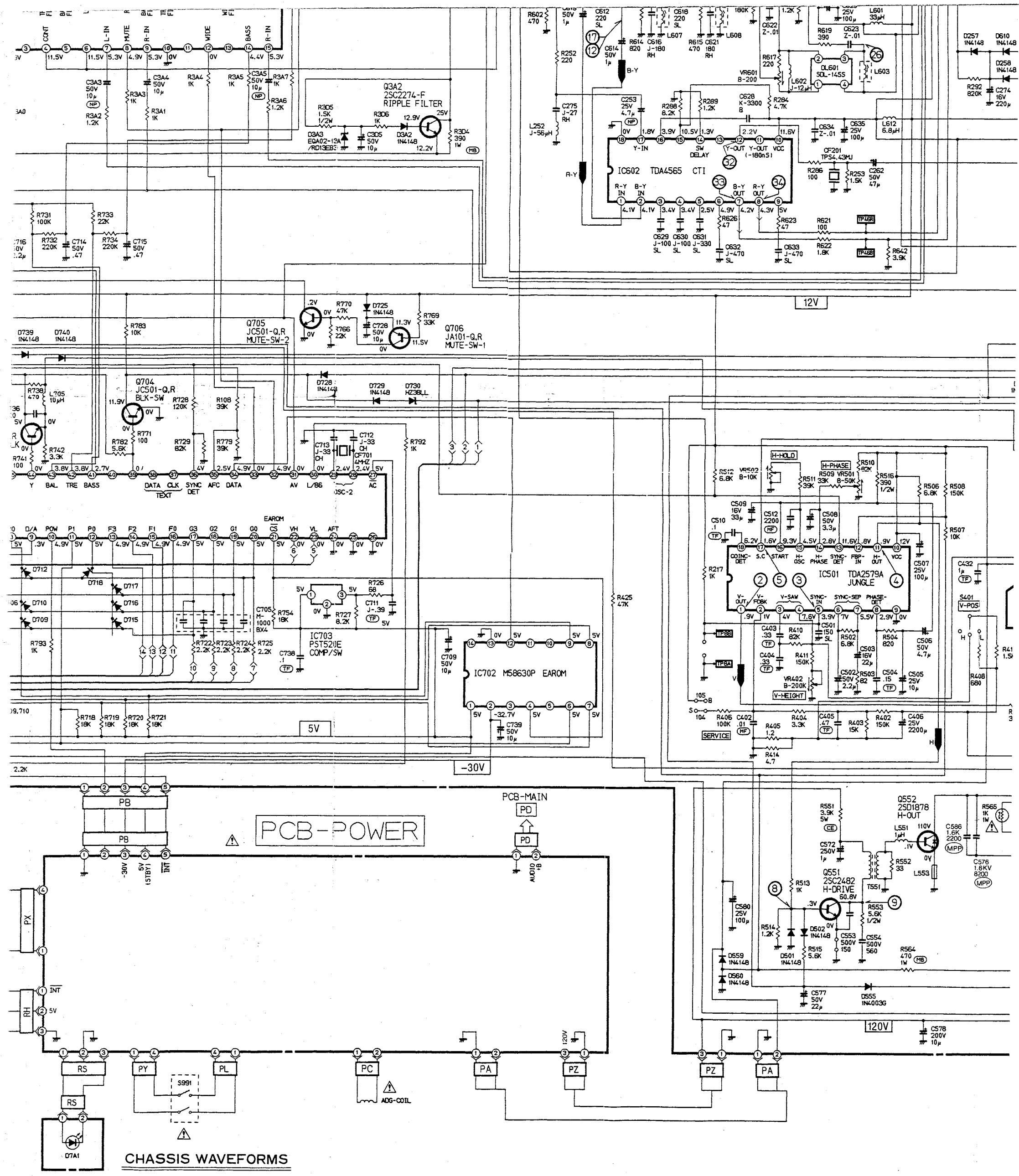
SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THERFORE REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS. FOR ACCURACY OF THE REPLACEMENT REFER TO THE PARTS LIST OF SERVICE MANUAL.

DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

NOTE 1:

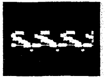
1. The unit of resistance is "ohm" with no symbol.
   Accordingly, K = 1000 ohms
   M = 1000K ohms.
2. The wattage of resistors, if not specifically designated, is less than 1/4 watt.
3. Resistors, if not specifically designated, are carbon resistors.
4. The marks of resistors are as follows:
   - CE : Cemented resistor
   - MB : Metal oxide film resistor (type B)
   - MPC : Metel plate cement resistor.
   - ML : Metal linear resistor.
   - Ⓢ : Fixed composition resistor
   - Ⓦ : Wire wound resistor
   - Ⓜ : Metal film resistor
5. The tolerance of resistor value, if not specifically designated, is:
   ±5%. K = ±10% M = ±20%
6. The unit of capacitance, if not specifically designated, is;
   a) μF, for numbers less than 1
   b) PF, for numbers more than 1
7. Capacitors, if not specifically designated are Ceramic capacitors except electrolytic capacitors.
8. The marks of capacitors are as follows:
   - ALM : Aluminus electrolytic capacitor
   - MF : Polyester capacitor
   - PP : Polypropylene film capacitor
   - TANT : Tantalum capacitor
   - TF : Twin film capacitor.
   - MF.PP : Polyester polypropylene film capacitor.
   - MPP : Metallize plastic film capacitor.
   - NP : Non polarized electrolytic capacitor.
   - PS : Styrol capacitor.
   - SC : Semi conductor capacitor.
   - ⊥ : Electrolytic capacitor
9. The DC working voltage of capacitor, if not specifically designated is: 50V
10. The tolerance of capacitor value, if not specifically designated is:
    ±10% for polyester capacitor
    ±5% for ceramic capacitor
    and J = ±5% K = ±10% M = ±20% $P = {}^{+100\%}_{-0\%}$
    C=±0.25PF D=±0.5PF F=±1PF $Z = {}^{+80\%}_{-20\%}$ N=±30%

SPECIFIC SYMBOL	
Zener Diode	Varistor Crystal unit

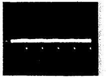

Q3A2
2SC2274-F
RIPPLE FILTER
IC602 TDA4565 CTI
Y-IN
SW DELAY
Y-OUT
Y-OUT (-180nS)
VCC
R-Y IN
B-Y IN
B-Y OUT
R-Y OUT
CF201 TPS4.43MJ
12V
Q705
JC501-Q.R
MUTE-SW-2
Q706
JA101-Q.R
MUTE-SW-1
Q704
JC501-Q.R
BLK-SW
Y
BAL
TRE
BASS
DATA
CLK
TEXT
SYNC DET
AFC
DATA
AV
L/86
OSC-2
AC
EAROM
D/A
POW
IC703
PST520E
COMP/SW
IC702 M58630P EAROM
5V
-30V
H-HOLD
H-PHASE
IC501 TDA2579A JUNGLE
COINC-DET
S.C
START
H-OSC
H-PHASE
SYNC-DET
FBP-IN
H-OUT
VCC
V-OUT
V-FDBK
V-SAW
SYNC-IN
SYNC-SEP
PHASE-DET
V-HEIGHT
SERVICE
V-POS
Q552
2SD1878
H-OUT
Q551
2SC2482
H-DRIVE
T551
120V
PCB-MAIN
PD
PB
PCB-POWER
-30V
5V (STBY)
INT
AUDIO +B
PX
RH
INT
5V
RS
PY
PL
S991
PC
ADG-COIL
PA
PZ
PZ
PA
D7A1
PCB-LED

CHASSIS WAVEFORMS

SECAM


①2.2Vp-p(H)

SECAM


②5.4Vp-p(V)

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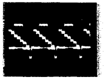
③2.1Vp-p(H)

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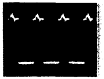
④3Vp-p(H)

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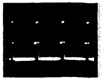
⑤9.1Vp-p(H)

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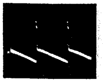
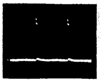
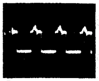

⑥50Vp-p(V)

SECAM


⑦26Vp-p(V)

SECAM


⑧1.5Vp-p(H)

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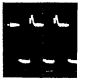
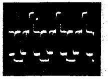
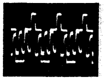

⑨116Vp-p(H)

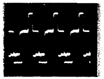
SECAM


⑱120Vp-p(H)

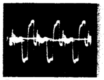
SECAM


⑲120Vp-p(H)

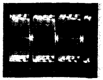
SECAM


⑳124Vp-p(H)

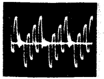
SECAM


㉑1Vp-p(H)

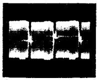
SECAM


㉒0.3Vp-p(H)

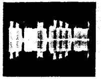
SECAM


㉓1.3Vp-p(H)

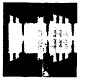
SECAM

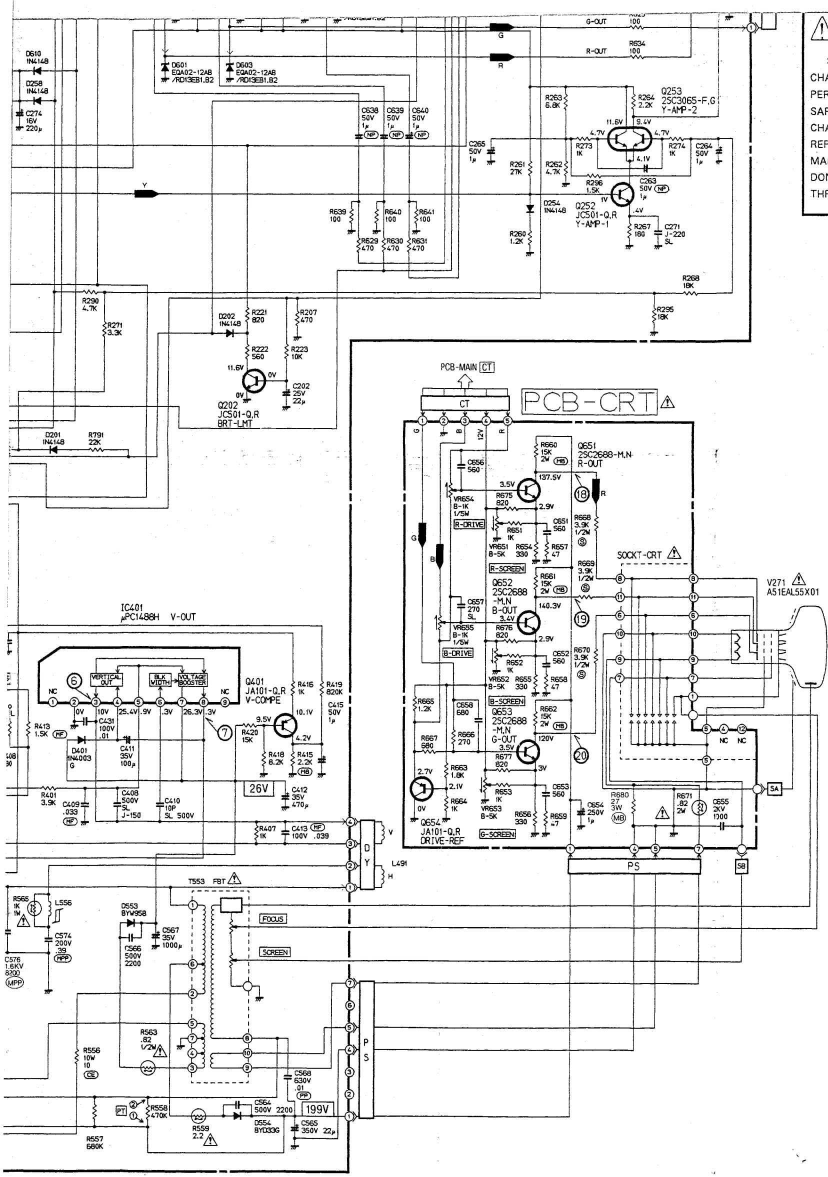

㉔960mVp-p(H)

SECAM


㉕2.3Vp-p(H)

SECAM


㉖1.1Vp-p(H)


G-OUT
R-OUT
R634 100
D610 1N4148
D258 1N4148
C274 16V 220μ
D601 EQA02-12AB /RD13EB1.B2
D603 EQA02-12AB /RD13EB1.B2
C638 50V 1μ NP
C639 50V 1μ NP
C640 50V 1μ NP
R263 6.8K
R264 2.2K
Q253 2SC3065-F,G Y-AMP-2
11.6V
9.4V
4.7V
R273 1K
R274 1K
C265 50V 1μ
C264 50V 1μ
R261 27K
R262 4.7K
4.1V
R296 1.5K
C263 50V 1μ NP
Y
R639 100
R640 100
R641 100
R629 470
R630 470
R631 470
D254 1N4148
Q252 JC501-Q,R Y-AMP-1
R267 180
C271 J-220 SL
R260 1.2K
R268 18K
R290 4.7K
R271 3.3K
D202 1N4148
R221 820
R207 470
R222 560
R223 10K
R295 18K
11.6V
0V
C202 25V 22μ
Q202 JC501-Q,R BRT-LMT
D201 1N4148
R791 22K
PCB-MAIN CT
CT
PCB-CRT
12V
R660 15K 2W MB
Q651 2SC2688-M.N R-OUT
C656 560
137.5V
3.5V
VR654 B-1K 1/5W
R-DRIVE
R675 820
2.9V
R651 1K
C651 560
R668 3.9K 1/2W
VR651 B-5K
R654 330
R657 47
R-SCREEN
R669 3.9K 1/2W
SOCKT-CRT
R661 15K 2W MB
Q652 2SC2688 -M.N B-OUT
C657 270 SL
140.3V
3.4V
VR655 B-1K 1/5W
R676 820
2.9V
B-DRIVE
R652 1K
C652 560
R670 3.9K 1/2W
VR652 B-5K
R655 330
R658 47
B-SCREEN
V271 A51EAL55X01
R665 1.2K
C658 680
R662 15K 2W MB
Q653 2SC2688 -M.N G-OUT
120V
R667 680
R666 270
3.5V
R677 820
2.7V
R663 1.8K
2.1V
3V
R653 1K
C653 560
0V
R664 1K
VR653 B-5K
R656 330
R659 47
Q654 JA101-Q.R DRIVE-REF
G-SCREEN
R680 27 3W MB
C654 250V 1μ
R671 .82 2W
C655 2KV 1000
NC NC
SA
PS
SB
IC401 μPC1488H V-OUT
VERTICAL OUT
BLK WIDTH
VOLTAGE BOOSTER
NC
NC
Q401 JA101-Q,R V-COMPE
R416 1K
R419 820K
C415 50V 1μ
0V
10V
25.4V
.9V
.3V
26.3V
.3V
9.5V
10.1V
R413 1.5K MF
C431 100V .01
D401 1N4003 G
C411 35V 100μ
R420 15K
4.2V
R418 8.2K
R415 2.2K MB
26V
C412 35V 470μ
R401 3.9K
C409 .033 MF
C408 500V SL J-150
C410 10P SL 500V
R407 1K
C413 MF 100V .039
DY
V
H
L491
T553 FBT
R565 1K 1W
L556
D553 BYW358
C567 35V 1000μ
C574 200V .39 MPP
C566 500V 2200
FOCUS
SCREEN
C576 1.6KV 8200 MPP
R563 .82 1/2W
R556 10W 10 CE
C568 630V .01 PP
PT
R558 470K
C564 500V 2200
199V
R557 680K
R559 2.2
D554 BYD33G
C565 350V 22μ

SERVING PRECAUTION

SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THERFORE REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS. FOR ACCURACY OF THE REPLACEMENT REFER TO THE PARTS LIST OF SERVICE MANUAL.
DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

NOTE 1:

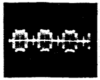
1. The unit of resistance is "ohm" with no symbol.
   Accordingly, K = 1000 ohms
   M = 1000K ohms.
2. The wattage of resistors, if not specifically designated, is less than 1/4 watt.
3. Resistors, if not specifically designated, are carbon resistors.
4. The marks of resistors are as follows:
   CE : Cemented resistor
   MB : Metal oxide film resistor (type B)
   MPC : Metel plate cement resistor.
   ML : Metal linear resistor.
   Ⓢ : Fixed composition resistor
   Ⓦ : Wire wound resistor
   Ⓜ : Metal film resistor
5. The tolerance of resistor value, if not specifically designated, is:
   ±5%, K = ±10% M = ±20%
6. The unit of capacitance, if not specifically designated, is;
   a) μF, for numbers less than 1
   b) PF, for numbers more than 1
7. Capacitors, if not specifically designated are Ceramic capacitor except electrolytic capacitors.
8. The marks of capacitors are as follows:
   ALM : Aluminus electrolytic capacitor
   MF : Polyester capacitor
   PP : Polypropylene film capacitor
   TANT : Tantalum capacitor
   TF : Twin film capacitor.
   MF.PP : Polyester polypropylene film capacitor.
   MPP : Metallize plastic film capacitor.
   NP : Non polarized electrolytic capacitor.
   PS : Styrol capacitor.
   SC : Semi conductor capacitor.
   ╪ : Electrolytic capacitor
9. The DC working voltage of capacitor, if not specifically designa ed is: 50V
10. The tolerance of capacitor value, if not specifically designated i
    ±10% for polyester capacitor
    ±5% for ceramic capacitor
    and J = ±5% K = ±10% M = ±20% $P = {}^{+100\%}_{-\ \ 0\%}$
    C = ±0.25PF D = ±0.5PF F = ±1PF $Z = {}^{+80\%}_{-20\%}$ N = ±30

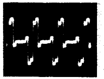
SPECIFIC SYMBOL	
Zener Diode	Varistor
Varicap	Crystal unit
Posistor	Air Gap
Thermistor	Part (resistor) attached on the copper-foil side of PCB
Fusible Resistor	Caramic filter

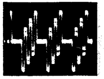
NOTE 2:

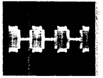
1. DC voltages were measured from points indicated to the circ ground with a high-Z voltmeter.
2. Waveforms were taken with offset PAL / SECAM colour signal.
3. This is a basic schematic diagram. Some sets may be subject modification according to engineering improvement.

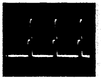
Vp-p(H)

PAL

⑩140mVp-p(H)

PAL

⑪1.1Vp-p(H)

PAL

⑫1.4Vp-p(H)

PAL

⑬1.6Vp-p(H)

SECAM

⑭9Vp-p(H)

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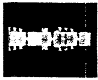
⑮150mVp-p(H)

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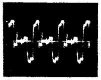
⑯1.1Vp-p(H)

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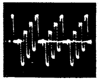
⑰1Vp-p(H)

Vp-p(H)

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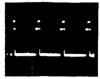
㉗2.2Vp-p(H)

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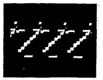
㉘2.1Vp-p(H)

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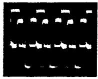
㉙3.5Vp-p(H)

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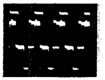
㉚3.5Vp-p(H)

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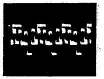
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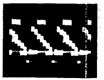
㉜0.5Vp-p(H)

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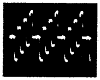
㉝1.2Vp-p(H)

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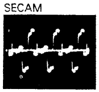
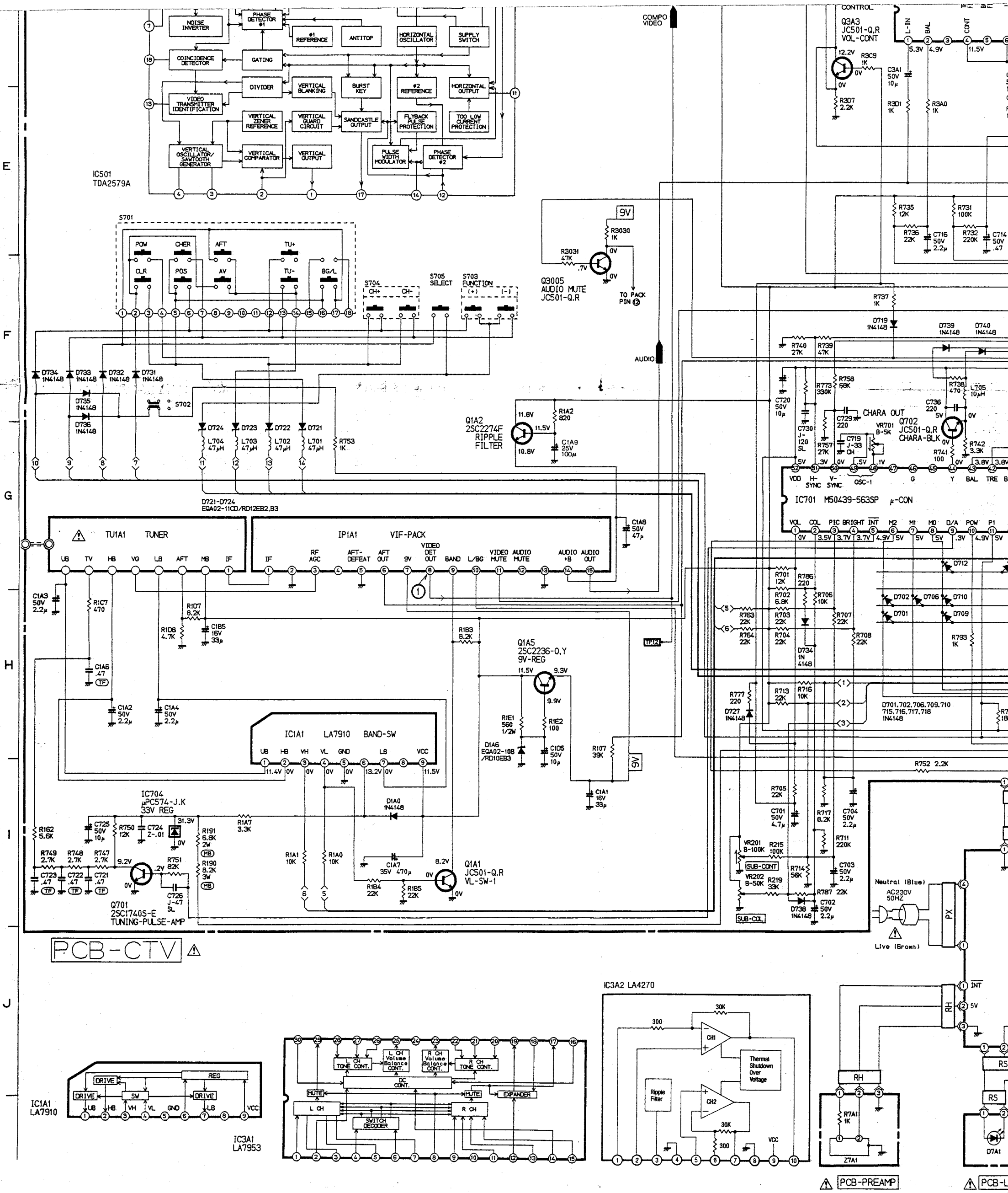
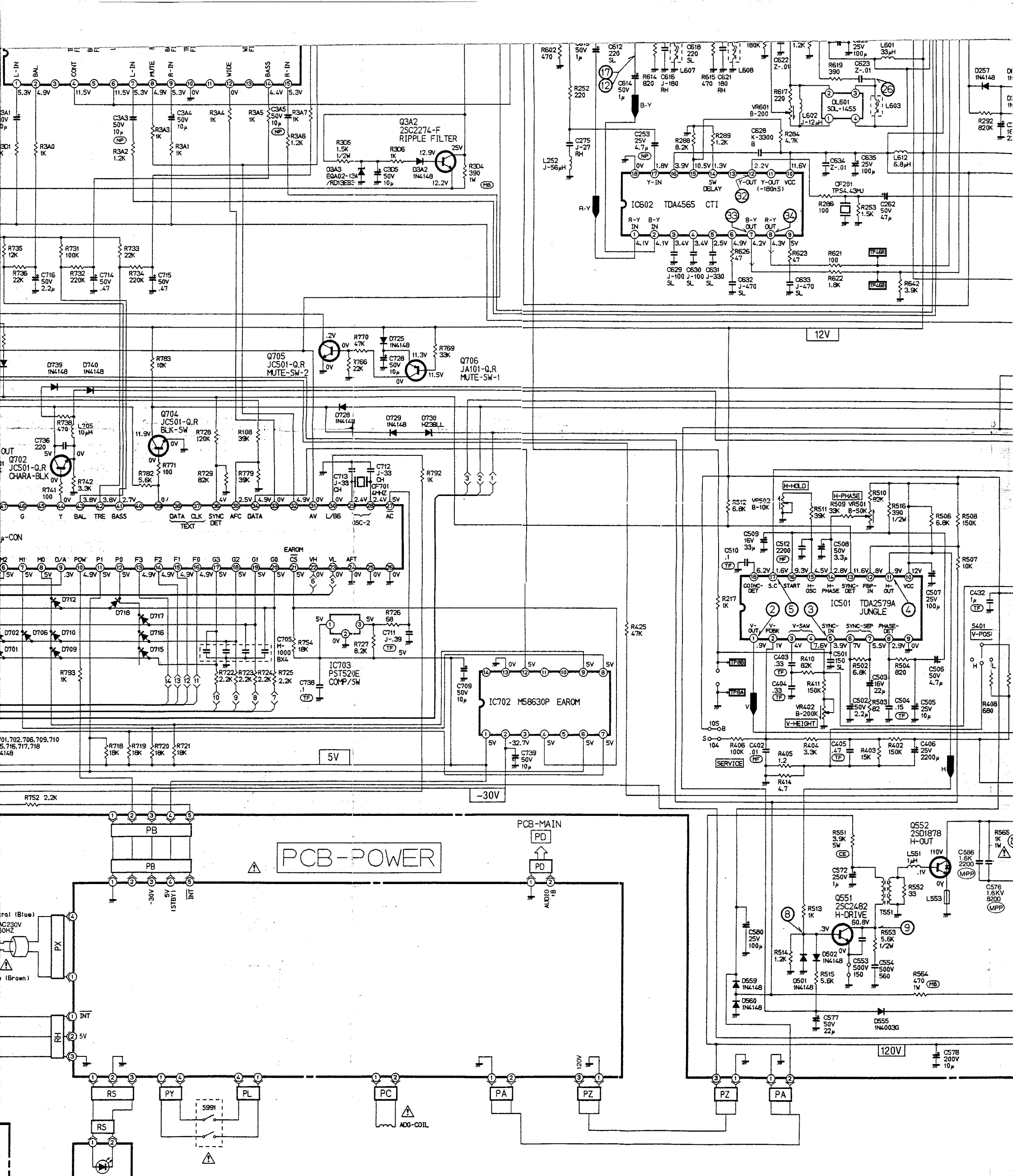

㉞1Vp-p(H)

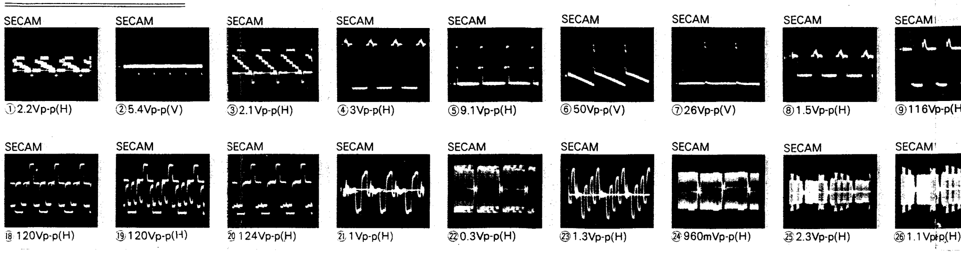
CT-21M1FM
CT-25M1FM(1/


E
F
G
H
I
J
NOISE INVERTER
PHASE DETECTOR #1
#1 REFERENCE
ANTITOP
HORIZONTAL OSCILLATOR
SUPPLY SWITCH
COINCIDENCE DETECTOR
GATING
DIVIDER
VERTICAL BLANKING
BURST KEY
#2 REFERENCE
HORIZONTAL OUTPUT
VIDEO TRANSMITTER IDENTIFICATION
VERTICAL ZENER REFERENCE
VERTICAL GUARD CIRCUIT
SANDCASTLE OUTPUT
FLYBACK PULSE PROTECTION
TOO LOW CURRENT PROTECTION
VERTICAL OSCILLATOR/ SAWTOOTH GENERATOR
VERTICAL COMPARATOR
VERTICAL OUTPUT
PULSE WIDTH MODULATOR
PHASE DETECTOR #2
IC501 TDA2579A
S701
POW CHER AFT TU+
CLR POS AV TU- BG/L
S704 CH+ CH-
S705 SELECT
S703 FUNCTION (+) (-)
D734 1N4148
D733 1N4148
D732 1N4148
D731 1N4148
D735 1N4148
D736 1N4148
S702
D724 D723 D722 D721
L704 47μH
L703 47μH
L702 47μH
L701 47μH
R753 1K
D721-D724 EQA02-11CD/RD12EB2.B3
COMPO VIDEO
AUDIO
9V
R3030 1K
R3031 47K
Q3005 AUDIO MUTE JC501-Q.R
TO PACK PIN ⑫
Q1A2 2SC2274F RIPPLE FILTER
R1A2 820
C1A9 25V 100μ
TU1A1 TUNER
UB TV HB VG LB AFT MB IF
IP1A1 VIF-PACK
IF RF AGC AFT-DEFEAT AFT OUT 9V VIDEO DET OUT BAND L/BG VIDEO MUTE AUDIO MUTE AUDIO +B AUDIO OUT
C1A8 50V 47μ
C1A3 50V 2.2μ
R1C7 470
R1D7 8.2K
R1D8 4.7K
C1B5 16V 33μ
C1A6 .47
C1A2 50V 2.2μ
C1A4 50V 2.2μ
R1B3 8.2K
Q1A5 2SC2236-O.Y 9V-REG
R1E1 560 1/2W
D1A6 EQA02-10B /RD10EB3
R1E2 100
C1D5 50V 10μ
R107 39K
C1A1 16V 33μ
TP12
IC1A1 LA7910 BAND-SW
UB HB VH VL GND LB VCC
IC704 μPC574-J.K 33V REG
R1A7 3.3K
D1A0 1N4148
R162 5.6K
C725 50V 10μ
R750 12K
C724 Z-.01
R191 6.8K 2W
R190 8.2K 3W
R749 2.7K
R748 2.7K
R747 2.7K
C723 .47
C722 .47
C721 .47
R751 82K
C726 J-.47 SL
Q701 2SC1740S-E TUNING-PULSE-AMP
R1A1 10K
R1A0 10K
C1A7 35V 470μ
R1B4 22K
R1B5 22K
Q1A1 JC501-Q.R VL-SW-1
CONTROL
Q3A3 JC501-Q.R VOL-CONT
R3C9 1K
C3A1 50V 10μ
R307 2.2K
R3D1 1K
R3A0 1K
L-IN BAL CONT
R735 12K
R731 100K
R736 22K
C716 50V 2.2μ
R732 220K
C714 50V .47
R737 1K
D719 1N4148
D739 1N4148
D740 1N4148
R740 27K
R739 47K
R758 68K
R773 330K
R738 470
L705 10μH
C720 50V 10μ
C729 220
CHARA OUT
C736 220
Q702 JC501-Q.R CHARA-BLK
VR701 B-5K
C730 J-120 SL
R757 27K
C719 J-33 CH
R741 100
R742 3.3K
VDD H-SYNC V-SYNC OSC-1 G Y BAL TRE
IC701 M50439-563SP μ-CON
VOL COL PIC BRIGHT INT M2 M1 M0 D/A POW P1
D712
R701 12K
R786 220
R702 6.8K
R706 10K
R763 22K
R703 22K
R707 22K
R764 22K
R704 22K
R708 22K
D734 1N 4148
D702 D706 D710
D701 D709
R793 1K
R777 220
R713 22K
R716 10K
D727 1N4148
D701,702,706,709,710 715,716,717,718 1N4148
R752 2.2K
R705 22K
C701 50V 4.7μ
R717 8.2K
C704 50V 2.2μ
R711 220K
VR201 B-100K
R215 100K
SUB-CONT
VR202 B-50K
R219 33K
R714 56K
C703 50V 2.2μ
R787 22K
D738 1N4148
C702 50V 2.2μ
SUB-COL
Neutral (Blue)
AC230V 50HZ
Live (Brown)
PX
PCB-CTV
IC1A1 LA7910
DRIVE REG DRIVE SW DRIVE
UB HB VH VL GND LB VCC
IC3A1 LA7953
L CH TONE CONT.
L CH Volume Balance CONT.
R CH Volume Balance CONT.
R CH TONE CONT.
DC CONT.
MUTE
EXPANDER
L CH
R CH
SWITCH DECODER
IC3A2 LA4270
30K
300
CH1
CH2
Ripple Filter
Thermal Shutdown Over Voltage
VCC
INT
5V
RH
RS
R7A1 1K
Z7A1
D7A1
PCB-PREAMP
PCB-L

④


PCB-POWER
PCB-MAIN
PCB-LED
IC602 TDA4565 CTI
IC501 TDA2579A JUNGLE
IC702 M58630P EAROM
IC703 PST520E COMP/SW
Q3A2 2SC2274-F RIPPLE FILTER
Q705 JC501-Q,R MUTE-SW-2
Q706 JA101-Q,R MUTE-SW-1
Q704 JC501-Q,R BLK-SW
Q702 JC501-Q,R CHARA-BLK
Q552 2SD1878 H-OUT
Q551 2SC2482 H-DRIVE
H-HOLD
H-PHASE
V-HEIGHT
V-POSI
SERVICE
12V
5V
-30V
120V
PB
PD
PX
RH
RS
PY
PL
PC
PA
PZ
S991
ADG-COIL
D7A1
AC230V 50HZ
μ-CON

CHASSIS WAVEFORMS



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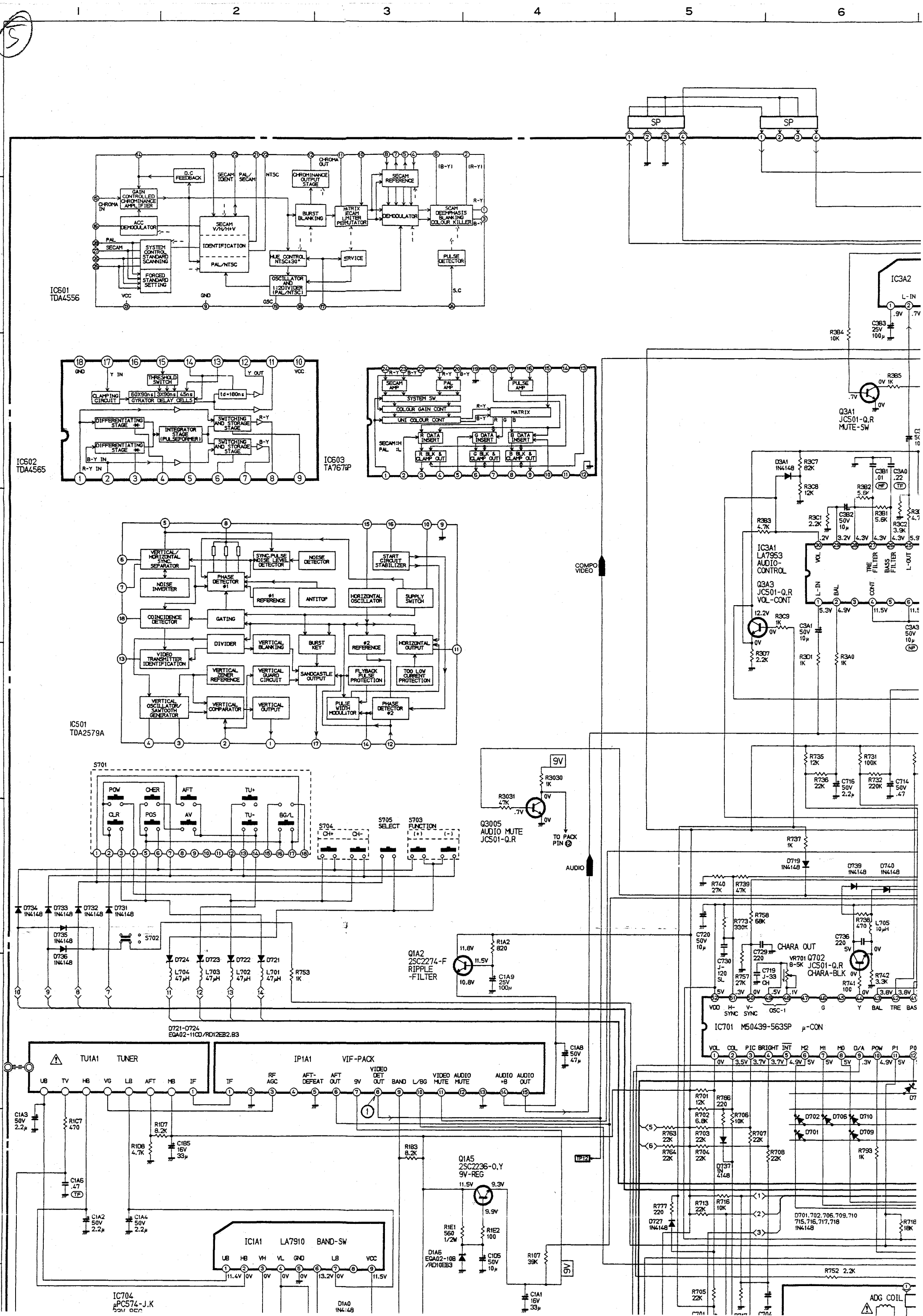
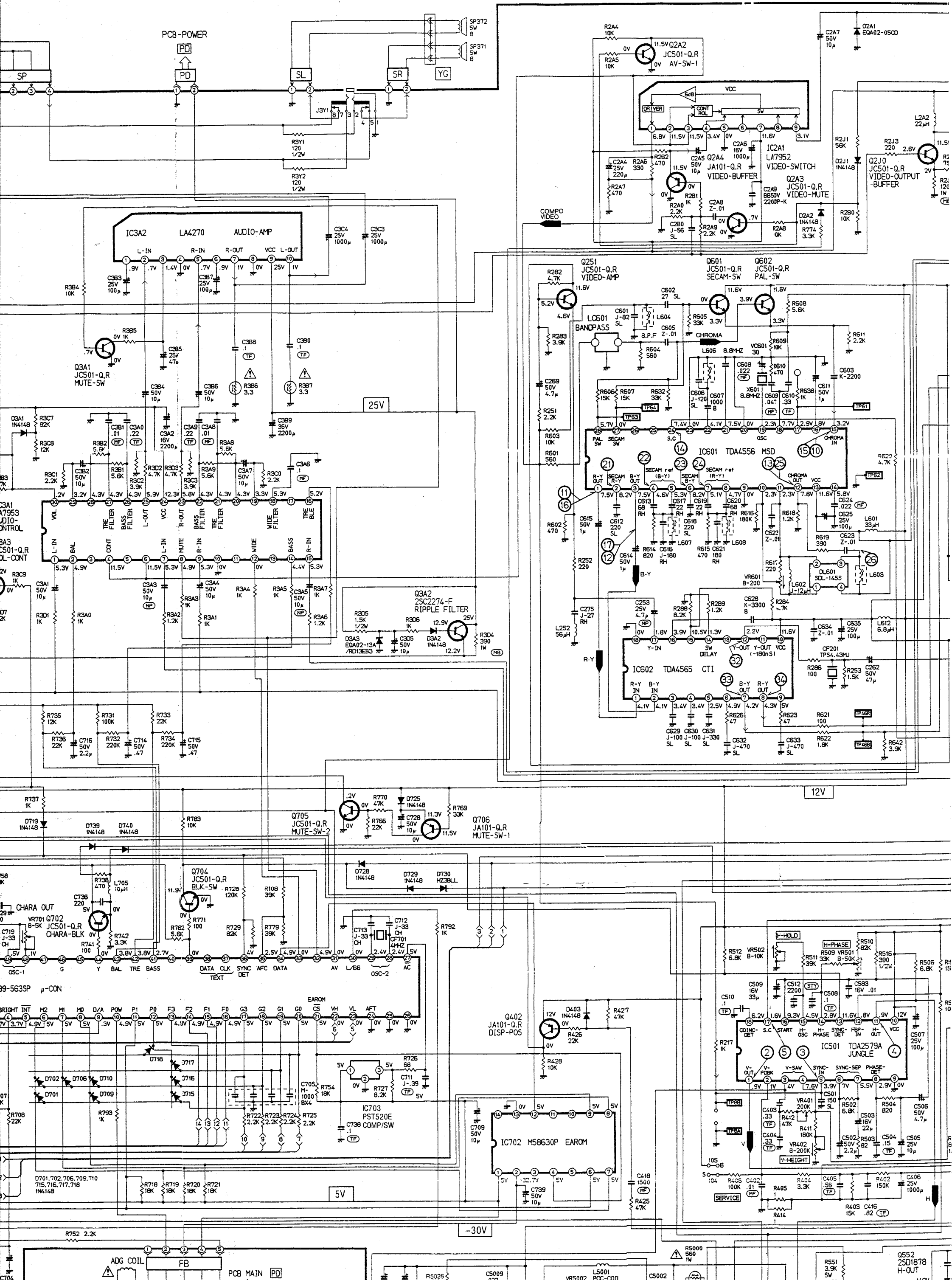
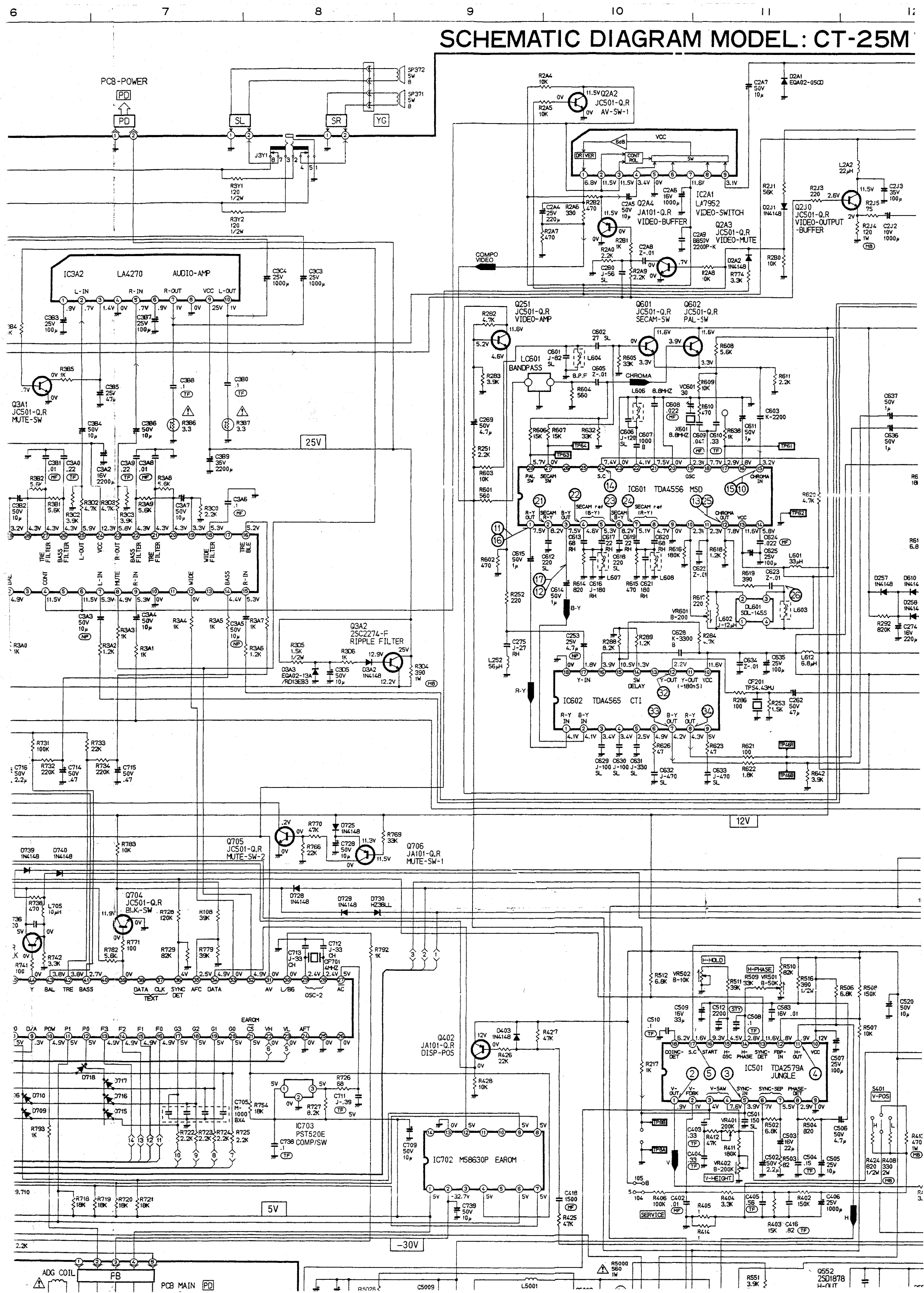


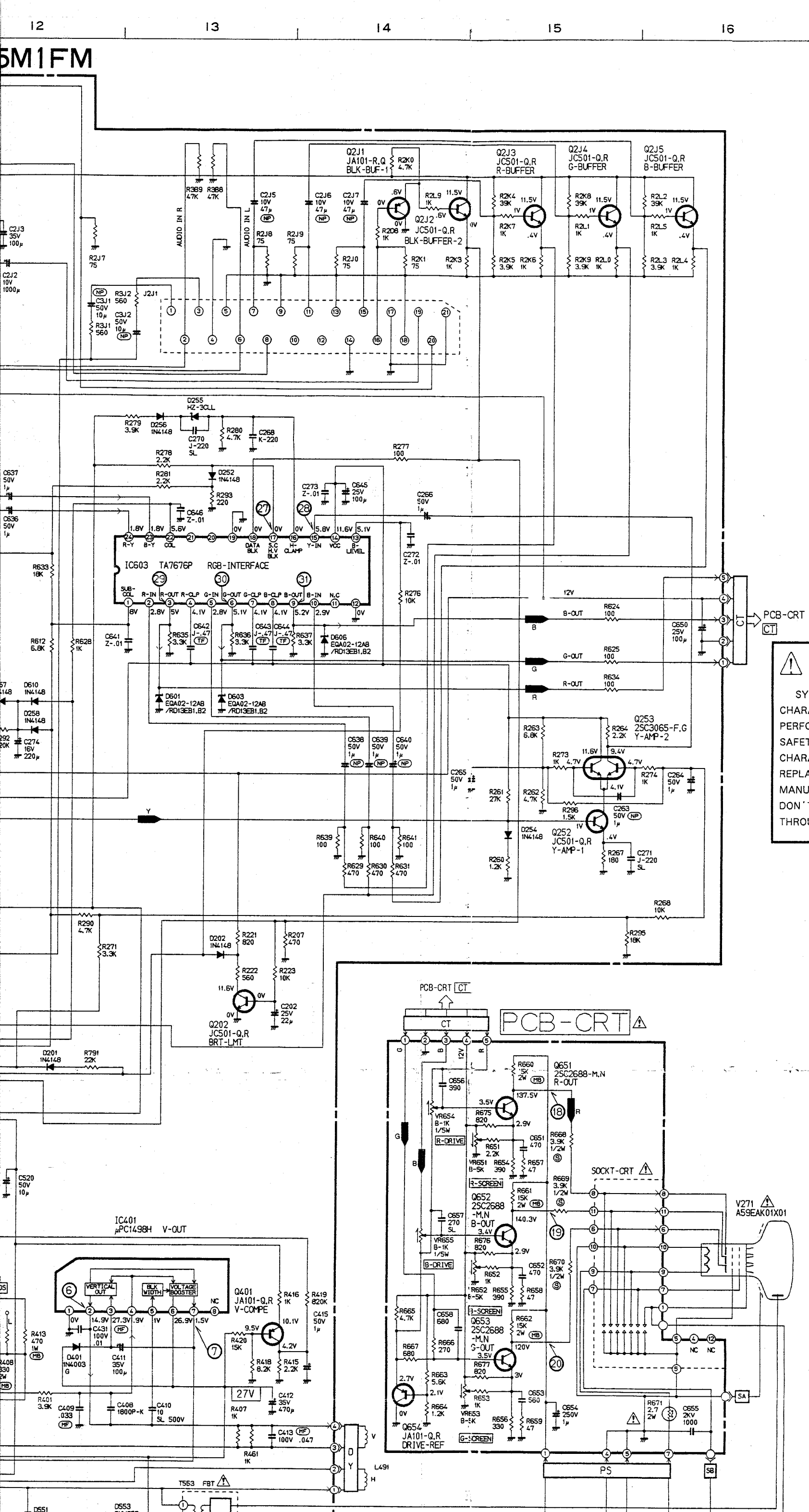
IC601
TDA4556
GAIN CONTROLLED CHROMINANCE AMPLIFIER
ACC DEMODULATOR
SYSTEM CONTROL STANDARD SCANNING
FORCED STANDARD SETTING
D.C FEEDBACK
SECAM V/H/H+V
IDENTIFICATION
PAL/NTSC
CHROMINANCE OUTPUT STAGE
BURST BLANKING
MATRIX SECAM LIMITER PERMUTATOR
SECAM REFERENCE
DEMODULATOR
SCAM DEEMPHASIS BLANKING COLOUR KILLER
HUE CONTROL NTSC±30°
SERVICE
OSCILLATOR AND 1:2DIVIDER (PAL/NTSC)
PULSE DETECTOR
IC602
TDA4565
CLAMPING CIRCUIT
THRESHOLD SWITCH
GYRATOR DELAY CELLS
DIFFERENTIATING STAGE
INTEGRATOR STAGE (PULSEFORMER)
SWITCHING AND STORAGE STAGE
IC603
TA7676P
SECAM AMP
PAL AMP
PULSE AMP
SYSTEM SW
COLOUR GAIN CONT
UNI COLOUR CONT
MATRIX
R DATA INSERT
G DATA INSERT
B DATA INSERT
R BLK & CLAMP OUT
G BLK & CLAMP OUT
B BLK & CLAMP OUT
SECAM:H PAL :L
IC501
TDA2579A
VERTICAL/HORIZONTAL SYNC. SEPARATOR
NOISE INVERTER
PHASE DETECTOR #1
SYNC.PULSE NOISE LEVEL DETECTOR
NOISE DETECTOR
START CIRCUIT STABILIZER
#1 REFERENCE
ANTITOP
HORIZONTAL OSCILLATOR
SUPPLY SWITCH
COINCIDENCE DETECTOR
GATING
DIVIDER
VERTICAL BLANKING
BURST KEY
#2 REFERENCE
HORIZONTAL OUTPUT
VIDEO TRANSMITTER IDENTIFICATION
VERTICAL ZENER REFERENCE
VERTICAL GUARD CIRCUIT
SANDCASTLE OUTPUT
FLYBACK PULSE PROTECTION
TOO LOW CURRENT PROTECTION
VERTICAL OSCILLATOR/SAWTOOTH GENERATOR
VERTICAL COMPARATOR
VERTICAL OUTPUT
PULSE WIDTH MODULATOR
PHASE DETECTOR #2
S701
POW
CH.ER
AFT
TU+
CLR
POS
AV
TU-
BG/L
S704
CH+
CH-
S705 SELECT
S703 FUNCTION
S702
D734 1N4148
D733 1N4148
D732 1N4148
D731 1N4148
D735 1N4148
D736 1N4148
D724
D723
D722
D721
L704 47μH
L703 47μH
L702 47μH
L701 47μH
R753 1K
D721-D724 EQA02-11CD/RD12EB2.B3
9V
R3030 1K
R3031 47K
Q3005 AUDIO MUTE JC501-Q.R
TO PACK PIN ⑫
COMPO VIDEO
AUDIO
Q1A2 2SC2274-F RIPPLE -FILTER
R1A2 820
C1A9 25V 100μ
C1A8 50V 47μ
TU1A1 TUNER
UB TV HB VG LB AFT MB IF
IP1A1 VIF-PACK
RF AGC
AFT-DEFEAT
AFT OUT
VIDEO DET OUT
BAND
L/BG
VIDEO MUTE
AUDIO MUTE
AUDIO +B
AUDIO OUT
C1A3 50V 2.2μ
R1C7 470
R1D7 8.2K
R1D8 4.7K
C1B5 16V 33μ
C1A6 .47 (TF)
C1A2 50V 2.2μ
C1A4 50V 2.2μ
R1B3 8.2K
Q1A5 2SC2236-O.Y 9V-REG
R1E1 560 1/2W
R1E2 100
D1A6 EQA02-10B /RD10EB3
C1O5 50V 10μ
R107 39K
C1A1 16V 33μ
IC1A1 LA7910 BAND-SW
IC704 μPC574-J.K
D1A0 1N4148
SP
SP
IC3A2
L-IN
R3B4 10K
C3B3 25V 100μ
R3B5 1K
Q3A1 JC501-Q.R MUTE-SW
D3A1 1N4148
R3C7 82K
R3C8 12K
R3B3 4.7K
C3B1 .01 (MF)
C3A0 .22 (TF)
R3B2 5.6K
C3B2 50V 10μ
R3B1 5.6K
R3C1 2.2K
R3C2 3.9K
IC3A1 LA7953 AUDIO-CONTROL
Q3A3 JC501-Q.R VOL-CONT
R3C9 1K
R3D7 2.2K
C3A1 50V 10μ
R3D1 1K
R3A0 1K
C3A3 50V 10μ (NP)
VOL TRE FILTER BASS FILTER L-OUT
L-IN BAL CONT
R735 12K
R736 22K
C716 50V 2.2μ
R731 100K
R732 220K
C714 50V .47
R737 1K
D719 1N4148
D739 1N4148
D740 1N4148
R740 27K
R739 47K
R758 68K
R773 330K
C720 50V 10μ
C730 J-120 SL
C729 220
CHARA OUT
VR701 B-5K
C719 J-33 CH
R757 27K
R738 470
L705 10μH
C736 220
Q702 JC501-Q.R CHARA-BLK
R742 3.3K
R741 100
IC701 M50439-563SP μ-CON
VDD H-SYNC V-SYNC OSC-1 G Y BAL TRE BAS
VOL COL PIC BRIGHT INT M2 M1 M0 D/A POW P1 P0
R701 12K
R786 220
R706 10K
R702 6.8K
R763 22K
R703 22K
R707 22K
R764 22K
R704 22K
R708 22K
D737 1N4148
D702 D706 D710 D701 D709
R793 1K
TP12
R777 220
D727 1N4148
R713 22K
R716 10K
D701,702,706,709,710 715,716,717,718 1N4148
R718 18K
R752 2.2K
R705 22K
ADG COIL

SCHEMATIC DIAGRAM MODEL: CT-2


6
7
8
9
10
11
SP
PCB-POWER
PD
SL
SR
YG
SP372 5W 8
SP371 5W 8
J3Y1
R3Y1 120 1/2W
R3Y2 120 1/2W
IC3A2 LA4270 AUDIO-AMP
L-IN
R-IN
R-OUT
VCC
L-OUT
Q3A1 JC501-Q.R MUTE-SW
25V
IC3A1 LA7953 AUDIO-CONTROL
Q3A3 JC501-Q.R VOL-CONT
VOL
TRE FILTER
BASS FILTER
L-OUT
VCC
R-OUT
BASS FILTER
TRE FILTER
WIDE FILTER
TREBLE
L-IN
BAL
CONT
MUTE
R-IN
WIDE
BASS
Q3A2 2SC2274-F RIPPLE FILTER
D3A3 EQA02-13A /RD13EB3
D3A2 1N4148
D3A1 1N4148
Q2A2 JC501-Q.R AV-SW-1
IC2A1 LA7952 VIDEO-SWITCH
DRIVER
CONTROL
SW
VCC
6dB
Q2A4 JA101-Q.R VIDEO-BUFFER
Q2A3 JC501-Q.R VIDEO-MUTE
D2A1 EQA02-05CD
D2A2 1N4148
D2J1 1N4148
Q2J0 JC501-Q.R VIDEO-OUTPUT -BUFFER
COMPO VIDEO
Q251 JC501-Q.R VIDEO-AMP
Q601 JC501-Q.R SECAM-SW
Q602 JC501-Q.R PAL-SW
LC601 BANDPASS
B.P.F
CHROMA
L606 8.8MHZ
X601 8.8MHZ
IC601 TDA4556 MSD
PAL SW
SECAM SW
S.C
OSC
CHROMA IN
R-Y OUT
SECAM R-Y
B-Y OUT
SECAM ref (B-Y)
SECAM B-Y
SECAM ref (R-Y)
CHROMA OUT
VCC
DL601 SDL-1455
L601 33µH
L602 J-12µH
L603
L607
L608
L612 6.8µH
B-Y
R-Y
L252 56µH
IC602 TDA4565 CTI
Y-IN
SW DELAY
Y-OUT
Y-OUT (-180nS)
VCC
R-Y IN
B-Y IN
B-Y OUT
R-Y OUT
CF201 TPS4.43MJ
TP61
TP62
TP63
TP64
TP46R
TP46B
12V
Q705 JC501-Q.R MUTE-SW-2
Q706 JA101-Q.R MUTE-SW-1
D725 1N4148
D719 1N4148
D739 1N4148
D740 1N4148
D728 1N4148
D729 1N4148
D730 HZ3BLL
Q704 JC501-Q.R BLK-SW
L705 10µH
CHARA OUT
Q702 JC501-Q.R CHARA-BLK
VR701 B-5K
CF701 4MHZ
OSC-1
G
Y
BAL
TRE
BASS
DATA
CLK
TEXT
SYNC DET
AFC
DATA
AV
L/B6
OSC-2
AC
89-563SP µ-CON
BRIGHT
INT
M2
M1
M0
D/A
POW
P1
P0
F3
F2
F1
F0
G3
G2
G1
G0
CS
VH
VL
AFT
EAROM
D718
D717
D716
D715
D702
D706
D710
D701
D709
D701.702.706.709.710 715.716.717.718 1N4148
IC703 PST520E COMP/SW
5V
-30V
Q402 JA101-Q.R DISP-POS
D403 1N4148
IC702 M58630P EAROM
H-HOLD
H-PHASE
VR502 B-10K
VR501 B-50K
IC501 TDA2579A JUNGLE
COINC-DET
S.C
START
H-OSC
H-PHASE DET
SYNC-DET
FBP-IN
H-OUT
VCC
V-OUT
V-FDBK
V-SAW
SYNC-IN
SYNC-SEP
PHASE-DET
VR401 200K
VR402 B-200K
V-HEIGHT
TP8B
TP8A
SERVICE
R752 2.2K
ADG COIL
FB
PCB MAIN
PD
R5000 560 1W
VR5002
L5001 PCC-COIL
C5002
C5009
R5026
R551 3.9K 5W
Q552 2SD1878 H-OUT

SCHEMATIC DIAGRAM MODEL: CT-25M


6
7
8
9
10
11
PCB-POWER
PD
SL
SR
YG
SP372
SP371
J3Y1
R3Y1 120 1/2W
R3Y2 120 1/2W
IC3A2 LA4270 AUDIO-AMP
L-IN
R-IN
R-OUT
VCC
L-OUT
Q3A1 JC501-Q,R MUTE-SW
25V
TRE FILTER
BASS FILTER
L-OUT
VCC
R-OUT
WIDE FILTER
TRE BLE
CONT
L-IN
MUTE
R-IN
WIDE
BASS
Q3A2 2SC2274-F RIPPLE FILTER
D3A3 EQA02-13A /RD13EB3
D3A2 1N4148
Q2A2 JC501-Q,R AV-SW-1
IC2A1 LA7952 VIDEO-SWITCH
DRIVER
CONT ROL
Q2A4 JA101-Q,R VIDEO-BUFFER
Q2A3 JC501-Q,R VIDEO-MUTE
D2A1 EQA02-05CD
Q2J0 JC501-Q,R VIDEO-OUTPUT -BUFFER
COMPO VIDEO
Q251 JC501-Q,R VIDEO-AMP
Q601 JC501-Q,R SECAM-SW
Q602 JC501-Q,R PAL-SW
LC601 BANDPASS
CHROMA
IC601 TDA4556 MSD
PAL SW
SECAM SW
SECAM ref (B-Y)
SECAM ref (R-Y)
CHROMA IN
CHROMA OUT
X601 8.8MHZ
DL601 SDL-145S
B-Y
R-Y
IC602 TDA4565 CTI
Y-IN
SW DELAY
Y-OUT
(-180nS)
CF201 TPS4.43MJ
12V
Q705 JC501-Q,R MUTE-SW-2
Q706 JA101-Q,R MUTE-SW-1
Q704 JC501-Q,R BLK-SW
D728 1N4148
D729 1N4148
D730 HZ36LL
BAL
TRE
BASS
DATA
CLK
TEXT
SYNC DET
AFC
AV
L/B6
OSC-2
AC
CF701 4MHZ
EAROM
D/A
POW
Q402 JA101-Q,R DISP-POS
IC703 PST520E COMP/SW
IC702 M58630P EAROM
5V
-30V
H-HOLD
H-PHASE
IC501 TDA2579A JUNGLE
COINC-DET
S.C
START
H-OSC
H-PHASE
SYNC-DET
FBP-IN
H-OUT
V-OUT
V-FDBK
V-SAW
SYNC-IN
SYNC-SEP
PHASE-DET
V-HEIGHT
SERVICE
S401 V-POS
ADG COIL
FB
PCB MAIN
Q552 2SD1878


12
13
14
15
16
17
5M1FM
Q2J1 JA101-R,Q BLK-BUF-1
Q2J2 JC501-Q,R BLK-BUFFER-2
Q2J3 JC501-Q,R R-BUFFER
Q2J4 JC501-Q,R G-BUFFER
Q2J5 JC501-Q,R B-BUFFER
AUDIO IN R
AUDIO IN L
J2J1
IC603 TA7676P RGB-INTERFACE
PCB-CRT CT
Q253 2SC3065-F,G Y-AMP-2
Q252 JC501-Q,R Y-AMP-1
Q202 JC501-Q,R BRT-LMT
IC401 μPC1498H V-OUT
VERTICAL OUT
BLK WIDTH
VOLTAGE BOOSTER
Q401 JA101-Q,R V-COMPE
PCB-CRT
Q651 2SC2688-M,N R-OUT
Q652 2SC2688-M,N B-OUT
Q653 2SC2688-M,N G-OUT
Q654 JA101-Q,R DRIVE-REF
R-DRIVE
B-DRIVE
R-SCREEN
B-SCREEN
G-SCREEN
SOCKT-CRT
V271 A59EAK01X01
PS
SA
SB
DY
L491
T553 FBT

SERVING PRECAUTION

SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THERFORE REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS. FOR ACCURACY OF THE REPLACEMENT REFER TO THE PARTS LIST OF SERVICE MANUAL.

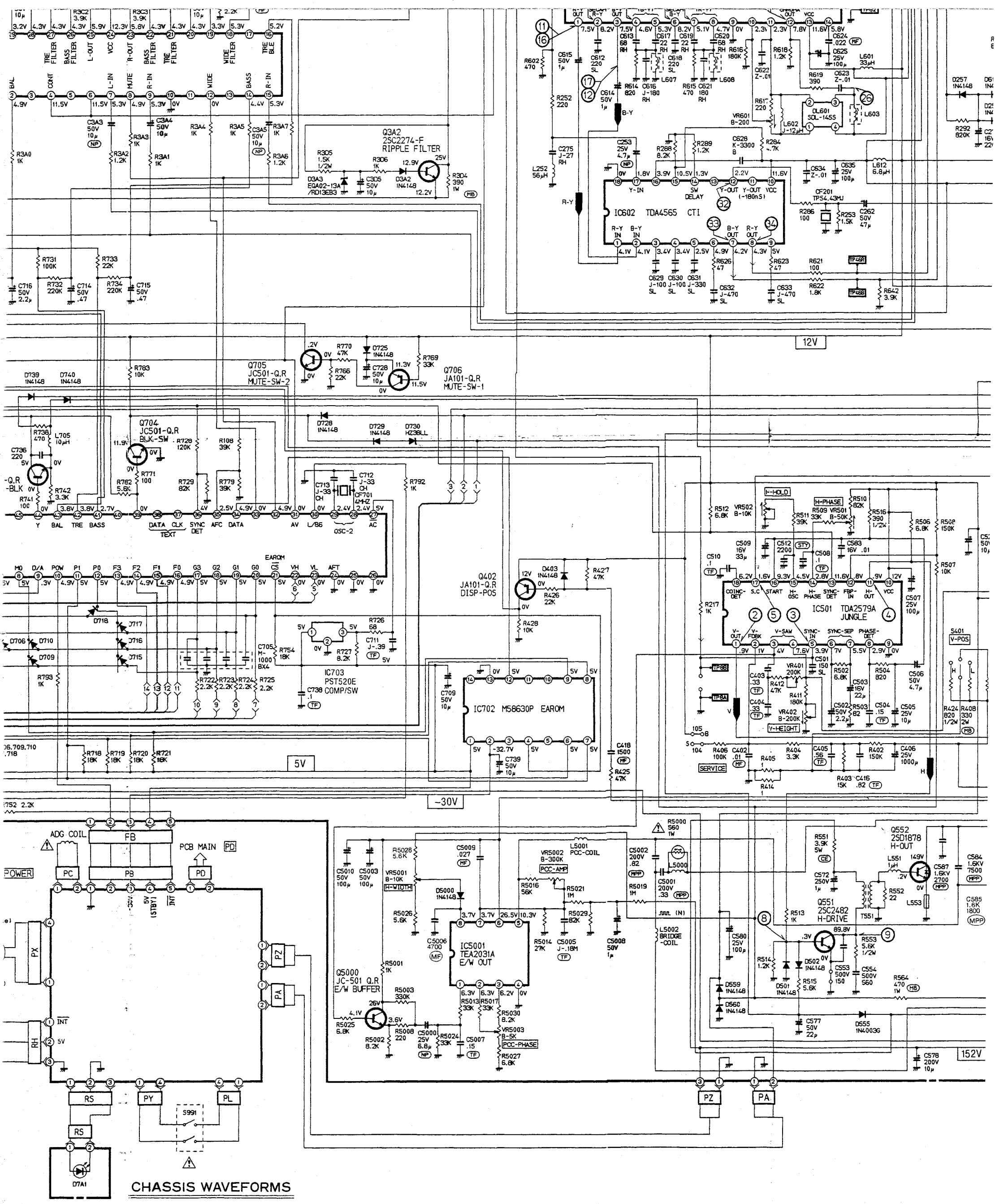
DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

NOTE 1:

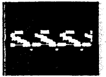
1. The unit of resistance is "ohm" with no symbol.
   Accordingly, K = 1000 ohms
   M = 1000K ohms.
2. The wattage of resistors, if not specifically designated, is le than 1/4 watt.
3. Resistors, if not specifically designated, are carbon resistors.
4. The marks of resistors are as follows:
   - CE : Cemented resistor
   - MB : Metal oxide film resistor (type B)
   - MPC : Metel plate cement resistor.
   - ML : Metal linear resistor.
   - Ⓢ : Fixed composition resistor
   - Ⓦ : Wire wound resistor
   - Ⓜ : Metal film resistor
5. The tolerance of resistor value, if not specifically designated, is
   ±5%, K = ±10% M = ±20%
6. The unit of capacitance, if not specifically designated, is;
   a) μF, for numbers less than 1
   b) PF, for numbers more than 1
7. Capacitors, if not specifically designated are Ceramic capacito except electrolytic capacitors.
8. The marks of capacitors are as follows:
   - ALM : Aluminus electrolytic capacitor
   - MF : Polyester capacitor
   - PP : Polypropylene film capacitor
   - TANT : Tantalum capacitor
   - TF : Twin film capacitor.
   - MF.PP : Polyester polypropylene film capacitor.
   - MPP : Metallize plastic film capacitor.
   - NP : Non polarized electrolytic capacitor.
   - PS : Styrol capacitor.
   - SC : Semi conductor capacitor.
   - ╪ : Electrolytic capacitor
9. The DC working voltage of capacitor, if not specifically design ed is: 50V
10. The tolerance of capacitor value, if not specifically designated
    ±10% for polyester capacitor
    ±5% for ceramic capacitor
    and J = ±5% K= ±10% M = ±20% $P = ^{+100\%}_{-\ 0\%}$
    C=±0.25PF D=±0.5PF F=±1PF $Z = ^{+80\%}_{-20\%}$ N=±3

SPECIFIC SYMBOL

Zener Diode	Varistor
	Crystal unit
Varicap	Air Gap


Q3A2 2SC2274-F RIPPLE FILTER
IC602 TDA4565 CTI
12V
Q705 JC501-Q.R MUTE-SW-2
Q706 JA101-Q.R MUTE-SW-1
Q704 JC501-Q.R BLK-SW
Q402 JA101-Q.R DISP-POS
IC703 PST520E COMP/SW
IC702 M58630P EAROM
IC501 TDA2579A JUNGLE
H-HOLD
H-PHASE
SERVICE
Y-HEIGHT
V-POS
5V
-30V
ADG COIL
FB
PCB MAIN
PD
POWER
PC
PB
PX
RH
PZ
PA
RS
PY
PL
S991
D7A1
PCB-LED
IC5001 TEA2031A E/W OUT
Q5000 JC-501 Q.R E/W BUFFER
H-WIDTH
PCC-AMP
PCC-PHASE
L5001 PCC-COIL
L5002 BRIDGE-COIL
Q552 2SD1878 H-OUT
Q551 2SC2482 H-DRIVE
152V

CHASSIS WAVEFORMS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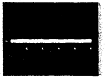
①2.2Vp-p(H)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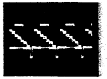
②5.4Vp-p(V)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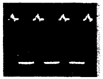
③2.1Vp-p(H)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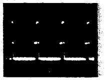
④3Vp-p(H)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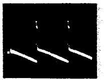
⑤9.1Vp-p(H)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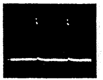
⑥50Vp-p(V)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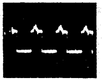
⑦26Vp-p(V)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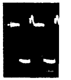
⑧1.5Vp-p(H)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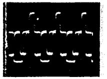
⑨116Vp-p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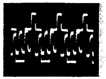
⑱ 120Vp-p(H)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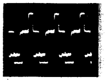
⑲ 120Vp-p(H)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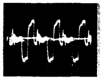
⑳ 124Vp-p(H)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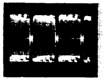
㉑ 1Vp-p(H)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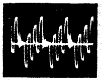
㉒ 0.3Vp-p(H)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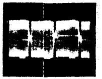
㉓ 1.3Vp-p(H)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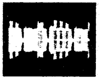
㉔ 960mVp-p(H)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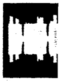
㉕ 2.3Vp-p(H)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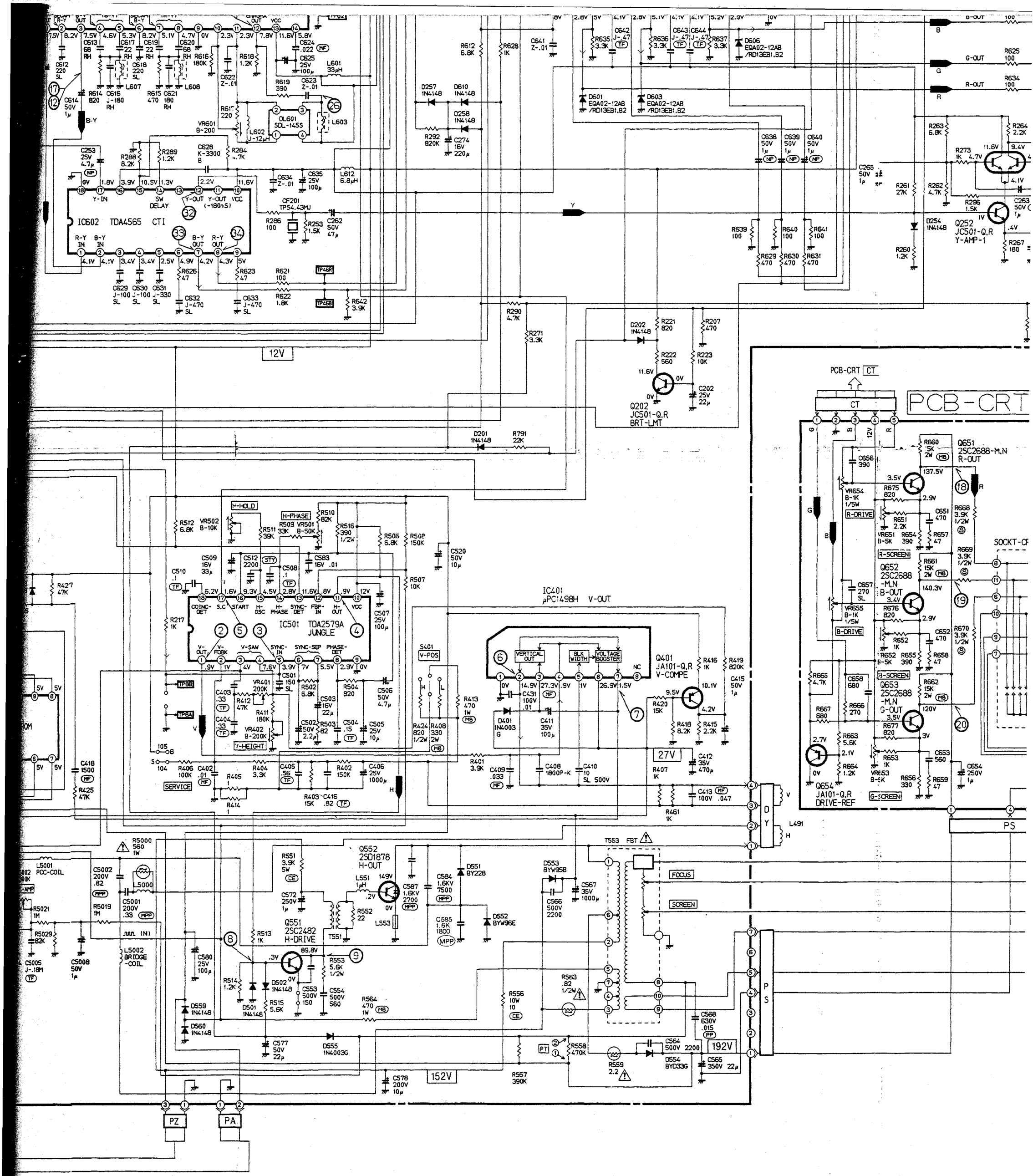
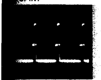
㉖ 1.1Vp-p


IC602 TDA4565 CTI
Y-IN
SW DELAY
Y-OUT
Y-OUT (-180nS)
VCC
R-Y IN
B-Y IN
B-Y OUT
R-Y OUT
DL601 SOL-1455
VR601 B-200
CF201 TP54.43MJ
B-Y
Y
B-OUT
G-OUT
R-OUT
Q252 JC501-Q.R Y-AMP-1
Q202 JC501-Q.R BRT-LMT
12V
PCB-CRT
CT
SOCKT-CP
Q651 2SC2688-M.N R-OUT
Q652 2SC2688 -M.N B-OUT
Q653 2SC2688 -M.N G-OUT
Q654 JA101-Q.R DRIVE-REF
R-DRIVE
R-SCREEN
B-DRIVE
B-SCREEN
G-SCREEN
PS
IC501 TDA2579A JUNGLE
COINC-DET
S.C
START
H-OSC
H-PHASE
SYNC-DET
FBP-IN
H-OUT
VCC
V-OUT
V-FDBK
V-SAW
SYNC-IN
SYNC-SEP
PHASE-DET
H-HOLD
H-PHASE
V-HEIGHT
SERVICE
IC401 μPC1498H V-OUT
VERTICAL OUT
BLK WIDTH
VOLTAGE BOOSTER
Q401 JA101-Q.R V-COMPE
S401 V-POS
27V
DY
L491
Q552 2SD1878 H-OUT
Q551 2SC2482 H-DRIVE
T551
T553 FBT
FOCUS
SCREEN
L5001 PCC-COIL
L5002 BRIDGE -COIL
152V
192V
PT
PZ
PA

CAM



9.1Vp-p(H)

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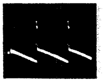

⑥50Vp-p(V)

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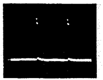

⑦26Vp-p(V)

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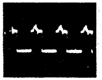

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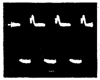
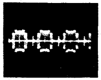


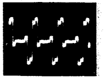
⑨116Vp-p(H)

PAL



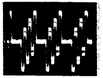
⑩140mVp-p(H)

PAL



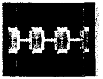
⑪1.1Vp-p(H)

PAL



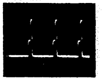
⑫1.4Vp-p(H)

PAL



⑬1.6Vp-p(H)

SECAM

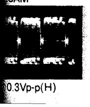


⑭9Vp-p(H)

SE

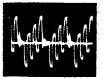
⑮

CAM



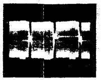
0.3Vp-p(H)

SECAM



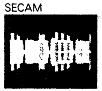
㉓1.3Vp-p(H)

SECAM



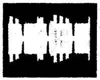
㉔960mVp-p(H)

SECAM



㉕2.3Vp-p(H)

SECAM



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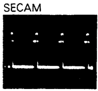

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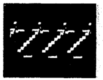
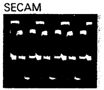


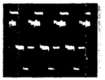
㉘2.1Vp-p(H)

SECAM



㉙3.5Vp-p(H)

SECAM



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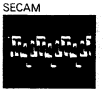
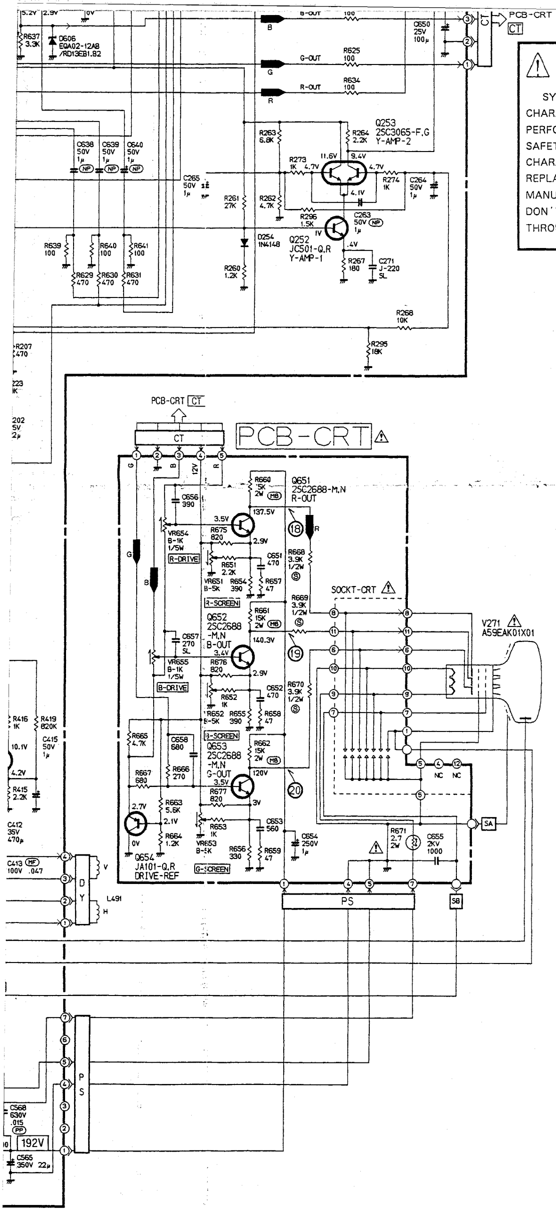


㉛3.6Vp-p(H)

SE

㉜


PCB-CRT
CT
B-OUT
G-OUT
R-OUT
R625 100
R634 100
C650 25V 100μ
R637 3.3K
D606 EQA02-12AB /RD13EB1.82
C638 50V 1μ NP
C639 50V 1μ NP
C640 50V 1μ NP
C265 50V 1μ
R263 6.8K
R264 2.2K
Q253 2SC3065-F.G Y-AMP-2
R273 1K
11.6V
9.4V
4.7V
4.1V
R274 1K
C264 50V 1μ
R261 27K
R262 4.7K
R296 1.5K
C263 50V 1μ NP
D254 1N4148
Q252 JC501-Q.R Y-AMP-1
R267 180
C271 J-220 SL
R260 1.2K
R639 100
R640 100
R641 100
R629 470
R630 470
R631 470
R268 10K
R295 18K
R207 470
PCB-CRT CT
PCB-CRT
CT
G
B
12V
R
R660 15K 2W MB
Q651 2SC2688-M.N R-OUT
C656 390
3.5V
137.5V
R675 820
2.9V
VR654 B-1K 1/5W
R-DRIVE
R651 2.2K
C651 470
R668 3.9K 1/2W S
VR651 B-5K
R654 390
R657 47
R-SCREEN
SOCKT-CRT
R669 3.9K 1/2W S
R661 15K 2W MB
Q652 2SC2688 -M.N B-OUT
140.3V
3.4V
C657 270 SL
VR655 B-1K 1/5W
R676 820
B-DRIVE
R652 1K
C652 470
R670 3.9K 1/2W S
VR652 B-5K
R655 390
R658 47
B-SCREEN
V271 A59EAK01X01
R665 4.7K
C658 680
R662 15K 2W MB
Q653 2SC2688 -M.N G-OUT
120V
R667 680
R666 270
R677 820
3V
2.7V
R663 5.6K
2.1V
R653 1K
C653 560
R664 1.2K
VR653 B-5K
R656 330
R659 47
C654 250V 1μ
R671 2.7 2W
C655 2KV 1000
Q654 JA101-Q.R DRIVE-REF
G-SCREEN
0V
NC
NC
SA
SB
PS
R416 1K
R419 820K
10.1V
C415 50V 1μ
4.2V
R415 2.2K
C412 35V 470μ
C413 MF 100V .047
DY
V
H
L491
C568 630V .015 PP
192V
C565 350V 22μ
P S

SERVING PRECAUTION

SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THERFORE REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS. FOR ACCURACY OF THE REPLACEMENT REFER TO THE PARTS LIST OF SERVICE MANUAL.

DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

NOTE 1:

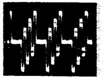
1. The unit of resistance is "ohm" with no symbol.
   Accordingly, K = 1000 ohms
   M = 1000K ohms.
2. The wattage of resistors, if not specifically designated, is less than 1/4 watt.
3. Resistors, if not specifically designated, are carbon resistors.
4. The marks of resistors are as follows:
   CE : Cemented resistor
   MB : Metal oxide film resistor (type B)
   MPC : Metel plate cement resistor.
   ML : Metal linear resistor.
   Ⓢ : Fixed composition resistor
   Ⓦ : Wire wound resistor
   Ⓜ : Metal film resistor
5. The tolerance of resistor value, if not specifically designated, is: ±5%, K = ±10% M = ±20%
6. The unit of capacitance, if not specifically designated, is:
   a) μF, for numbers less than 1
   b) PF, for numbers more than 1
7. Capacitors, if not specifically designated are Ceramic capacitors except electrolytic capacitors.
8. The marks of capacitors are as follows:
   ALM : Aluminus electrolytic capacitor
   MF : Polyester capacitor
   PP : Polypropylene film capacitor
   TANT : Tantalum capacitor
   TF : Twin film capacitor.
   MF.PP : Polyester polypropylene film capacitor.
   MPP : Metallize plastic film capacitor.
   NP : Non polarized electrolytic capacitor.
   PS : Styrol capacitor.
   SC : Semi conductor capacitor.
   : Electrolytic capacitor
9. The DC working voltage of capacitor, if not specifically designated is: 50V
10. The tolerance of capacitor value, if not specifically designated is:
    ±10% for polyester capacitor
    ±5% for ceramic capacitor
    and J = ±5% K = ±10% M = ±20% P = $^{+100\%}_{-0\%}$
    C = ±0.25PF D = ±0.5PF F = ±1PF Z = $^{+80\%}_{-20\%}$ N = ±30%

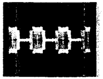
SPECIFIC SYMBOL

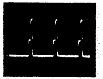
Zener Diode	Varistor
Varicap	Crystal unit
Posistor	Air Gap
Thermistor	Part (resistor) attached on the copper-foil side of PCB
Fusible Resistor	Caramic filter

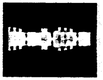
NOTE 2:

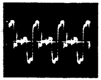
1. DC voltages were measured from points indicated to the circuit ground with a high-Z voltmeter.
2. Waveforms were taken with offset PAL / SECAM colour bar signal.
3. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.

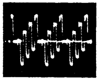
PAL

⑫1.4Vp-p(H)

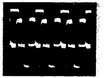
PAL

⑬1.6Vp-p(H)

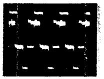
SECAM

⑭9Vp-p(H)

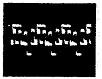
SECAM

⑮150mVp-p(H)

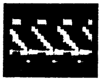
SECAM

⑯1.1Vp-p(H)

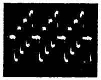
SECAM

⑰1Vp-p(H)

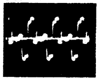
SECAM

㉙3.5Vp-p(H)

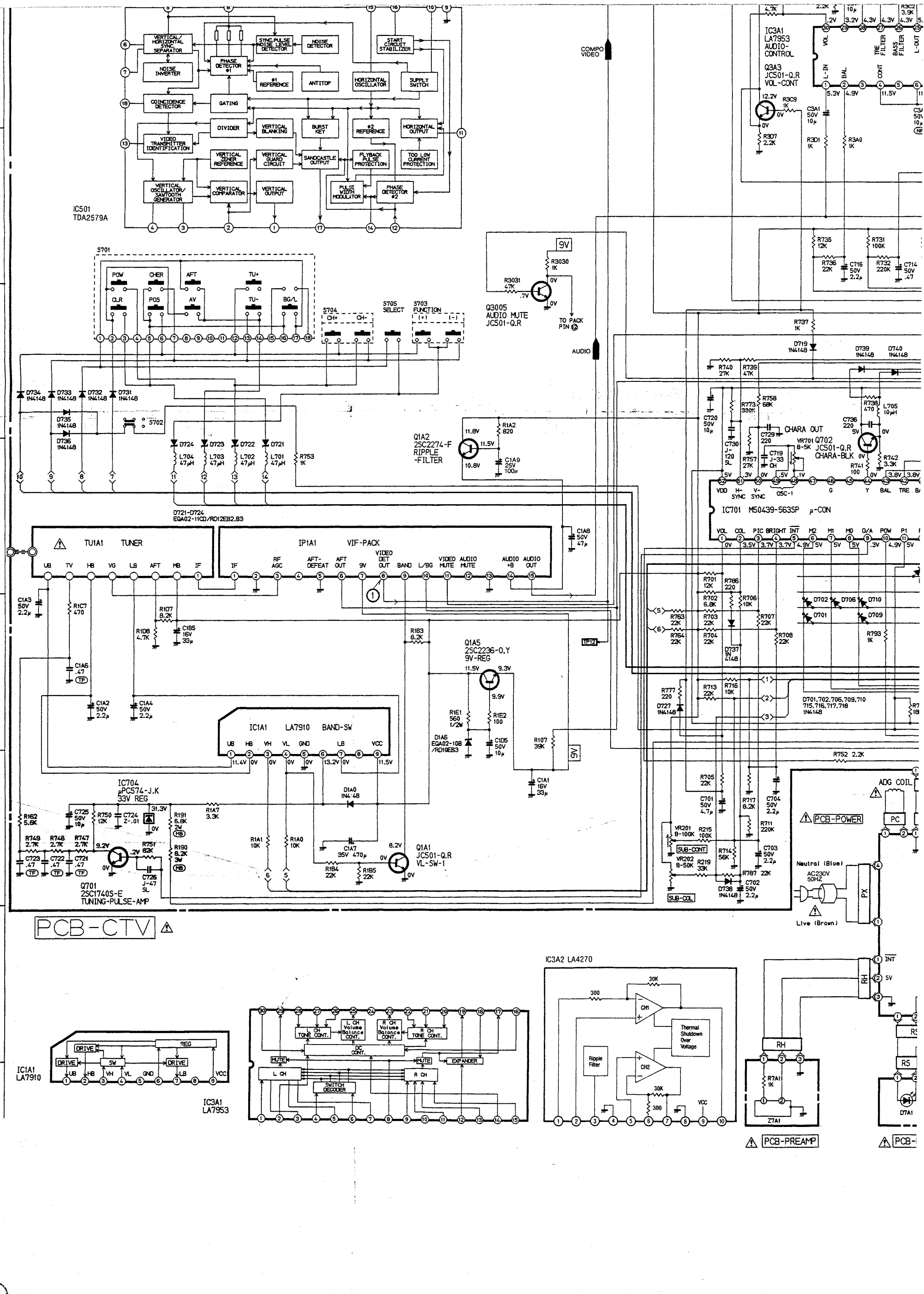
SECAM

㉚3.5Vp-p(H)

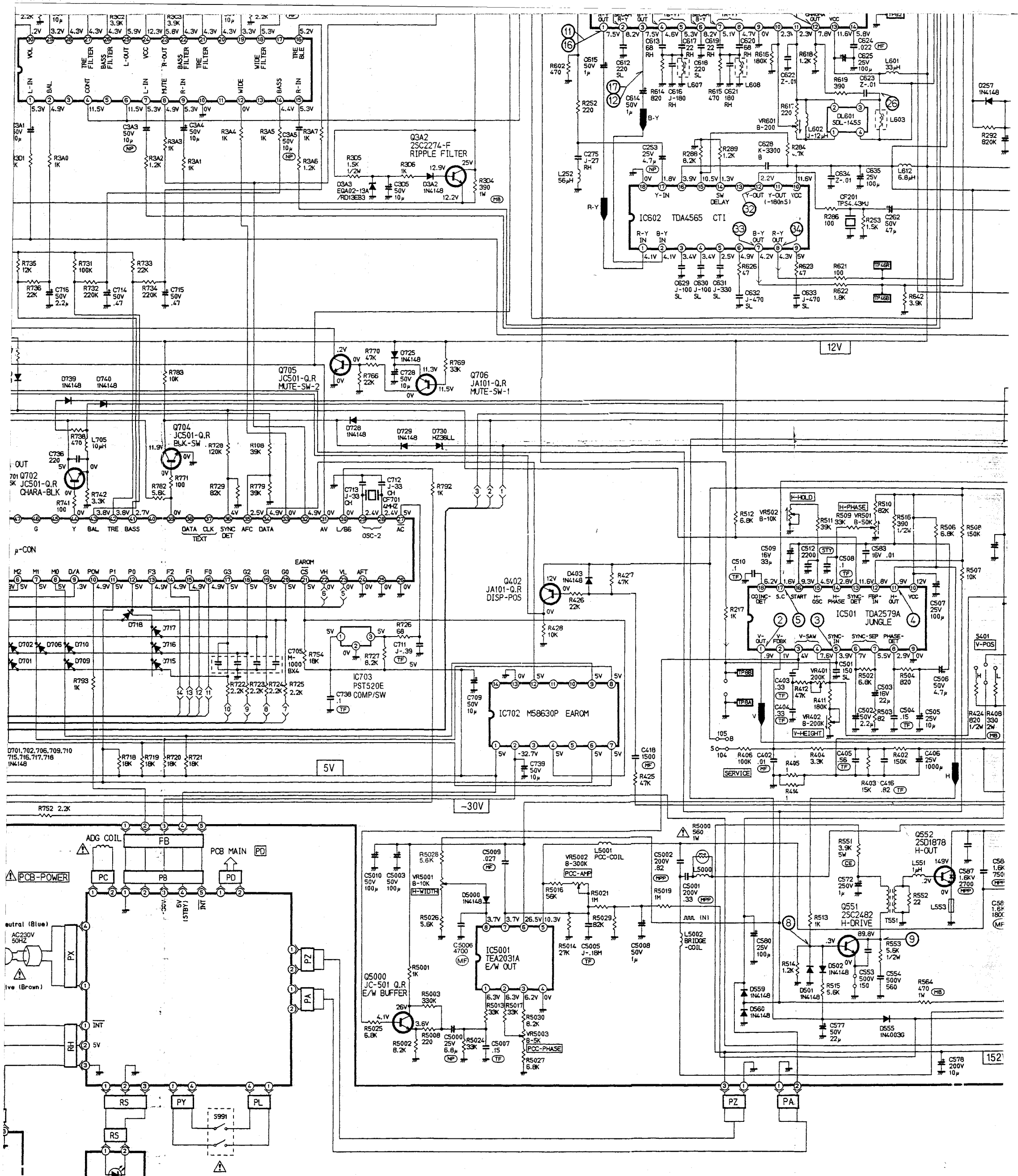
SECAM

㉛3.6Vp-p(H)

SECAM

㉜0.5Vp-p(H)

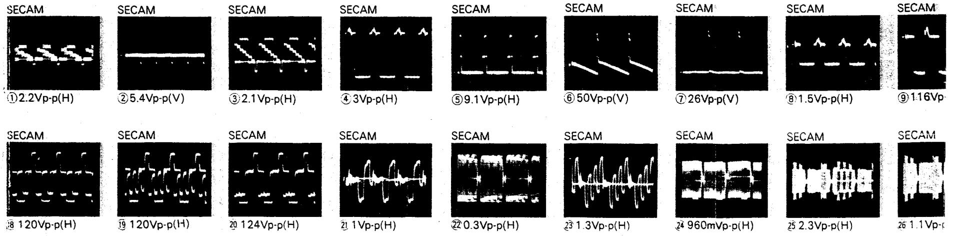
SECAM

㉝1.2Vp-p(H)

SECAM

㉞1Vp-p(H)


D
E
F
G
H
I
J
IC501
TDA2579A
VERTICAL/ HORIZONTAL SYNC. SEPARATOR
NOISE INVERTER
COINCIDENCE DETECTOR
VIDEO TRANSMITTER IDENTIFICATION
VERTICAL OSCILLATOR/ SAWTOOTH GENERATOR
PHASE DETECTOR #1
GATING
DIVIDER
VERTICAL ZENER REFERENCE
VERTICAL COMPARATOR
SYNC.PULSE NOISE LEVEL DETECTOR
NOISE DETECTOR
#1 REFERENCE
ANTITOP
VERTICAL BLANKING
BURST KEY
VERTICAL GUARD CIRCUIT
SANDCASTLE OUTPUT
VERTICAL OUTPUT
START CIRCUIT STABILIZER
HORIZONTAL OSCILLATOR
SUPPLY SWITCH
#2 REFERENCE
HORIZONTAL OUTPUT
FLYBACK PULSE PROTECTION
TOO LOW CURRENT PROTECTION
PULSE WIDTH MODULATOR
PHASE DETECTOR #2
S701
POW
CHER
AFT
TU+
CLR
POS
AV
TU-
BG/L
S704
CH+
CH-
S705 SELECT
S703 FUNCTION
(+)
(-)
S702
D734 1N4148
D733 1N4148
D732 1N4148
D731 1N4148
D735 1N4148
D736 1N4148
D724
D723
D722
D721
L704 47μH
L703 47μH
L702 47μH
L701 47μH
R753 1K
D721-D724 EQA02-11C0/RD12EB2.B3
9V
R3030 1K
R3031 47K
Q3005 AUDIO MUTE JC501-Q.R
TO PACK PIN ⑫
COMPO VIDEO
AUDIO
Q1A2 2SC2274-F RIPPLE -FILTER
R1A2 820
C1A9 25V 100μ
11.8V
11.5V
10.8V
C1A8 50V 47μ
TU1A1 TUNER
UB
TV
HB
VG
LB
AFT
MB
IF
IP1A1 VIF-PACK
RF AGC
AFT-DEFEAT
AFT OUT
VIDEO DET OUT
BAND
L/BG
VIDEO MUTE
AUDIO MUTE
AUDIO +B
AUDIO OUT
C1A3 50V 2.2μ
R1C7 470
R107 8.2K
R108 4.7K
C1B5 16V 33μ
C1A6 .47
C1A2 50V 2.2μ
C1A4 50V 2.2μ
R1B3 8.2K
Q1A5 2SC2236-O.Y 9V-REG
R1E1 560 1/2W
R1E2 100
D1A6 EQA02-10B /RD10EB3
C1D5 50V 10μ
R107 39K
C1A1 16V 33μ
TP12
IC1A1 LA7910 BAND-SW
VH
VL
GND
VCC
11.4V
13.2V
D1A0 1N4148
C1A7 35V 470μ
R1A1 10K
R1A0 10K
R1B4 22K
R1B5 22K
Q1A1 JC501-Q.R VL-SW-1
8.2V
IC704 μPC574-J.K 33V REG
31.3V
R162 5.6K
C725 50V 10μ
R750 12K
C724 Z-.01
R191 6.8K 2W
R190 8.2K 3W
R1A7 3.3K
R749 2.7K
R748 2.7K
R747 2.7K
C723 .47
C722 .47
C721 .47
R751 82K
C726 J-.47 SL
Q701 2SC1740S-E TUNING-PULSE-AMP
PCB-CTV
IC3A1 LA7953 AUDIO-CONTROL
Q3A3 JC501-Q.R VOL-CONT
VOL
L-IN
BAL
CONT
TRE FILTER
BASS FILTER
L-OUT
R3C9 1K
C3A1 50V 10μ
R307 2.2K
R3D1 1K
R3A0 1K
R735 12K
R731 100K
R736 22K
C716 50V 2.2μ
R732 220K
C714 50V .47
R737 1K
D719 1N4148
D739 1N4148
D740 1N4148
R740 27K
R739 47K
R773 330K
R758 68K
R738 470
L705 10μH
C720 50V 10μ
C730 J-120 SL
C729 220
CHARA OUT
C736 220
VR701 B-5K
Q702 JC501-Q.R CHARA-BLK
C719 J-33 CH
R757 27K
R741 100
R742 3.3K
IC701 M50439-563SP μ-CON
VDD
H-SYNC
V-SYNC
OSC-1
G
Y
BAL
TRE
VOL
COL
PIC
BRIGHT
INT
M2
M1
M0
D/A
POW
P1
R701 12K
R786 220
R702 6.8K
R706 10K
R763 22K
R703 22K
R707 22K
R764 22K
R704 22K
R708 22K
D737 1N4148
D702
D706
D710
D701
D709
R793 1K
R777 220
R713 22K
R716 10K
D727 1N4148
D701,702,706,709,710 715,716,717,718 1N4148
R752 2.2K
R705 22K
R717 8.2K
C704 50V 2.2μ
C701 50V 4.7μ
R711 220K
VR201 B-100K
R215 100K
SUB-CONT
VR202 B-50K
R219 33K
R714 56K
C703 50V 2.2μ
R787 22K
D738 1N4148
C702 50V 2.2μ
SUB-COL
ADG COIL
PC
PCB-POWER
Neutral (Blue)
AC230V 50HZ
PX
Live (Brown)
RH
INT
5V
RS
PCB-PREAMP
R7A1 1K
Z7A1
D7A1
IC1A1 LA7910
DRIVE
REG
SW
IC3A1 LA7953
L CH TONE CONT.
L CH Volume Balance CONT.
R CH Volume Balance CONT.
R CH TONE CONT.
DC CONT.
MUTE
EXPANDER
L CH
R CH
SWITCH DECODER
IC3A2 LA4270
30K
300
CH1
CH2
Thermal Shutdown Over Voltage
Ripple Filter
VCC

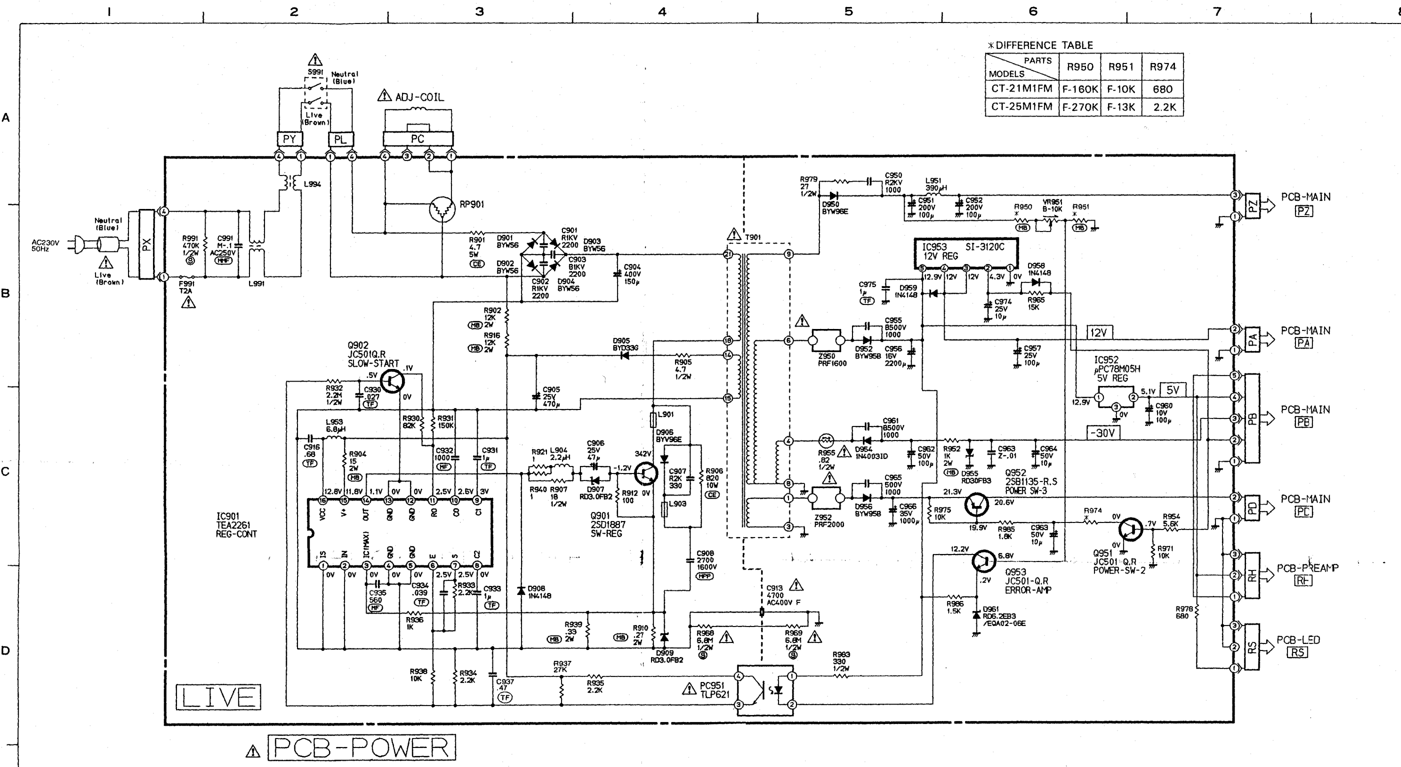

IC602 TDA4565 CTI
Y-IN
SW DELAY
Y-OUT
Y-OUT (-180nS)
R-Y IN
B-Y IN
B-Y OUT
R-Y OUT
VCC
B-Y
R-Y
Q3A2 2SC2274-F RIPPLE FILTER
Q705 JC501-Q.R MUTE-SW-2
Q706 JA101-Q.R MUTE-SW-1
Q704 JC501-Q.R BLK-SW
Q702 JC501-Q.R CHARA-BLK
μ-CON
DATA CLK TEXT
SYNC DET
AFC
AV
L/B6
OSC-2
AC
EAROM
Q402 JA101-Q.R DISP-POS
IC703 PST520E COMP/SW
IC702 M58630P EAROM
5V
-30V
12V
H-HOLD
H-PHASE
IC501 TDA2579A JUNGLE
COINC-DET
S.C START
H-OSC
H-PHASE
SYNC-DET
FBP-IN
H-OUT
VCC
V-OUT
V-FDBK
V-SAW
SYNC-IN
SYNC-SEP
PHASE-DET
V-HEIGHT
V-POS
SERVICE
ADG COIL
FB
PB
PC
PD
PCB MAIN
PCB-POWER
Neutral (Blue)
AC230V 50HZ
Live (Brown)
PX
RH
INT
5V
PZ
PA
RS
PY
PL
S991
D7A1
PCB-LED
AMP
L5001 PCC-COIL
VR5002 B-300K PCC-AMP
VR5001 B-10K H-WIDTH
IC5001 TEA2031A E/W OUT
Q5000 JC-501 Q.R E/W BUFFER
VR5003 B-5K PCC-PHASE
L5002 BRIDGE-COIL
Q552 2SD1878 H-OUT
Q551 2SC2482 H-DRIVE
T551
L553
152V

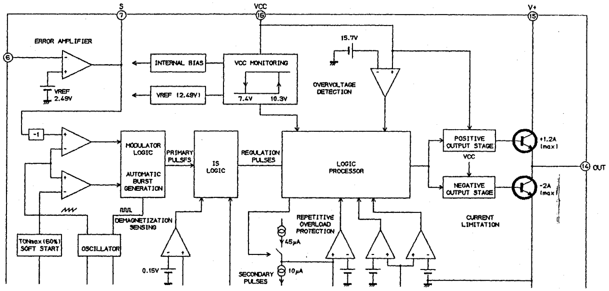
CHASSIS WAVEFORMS

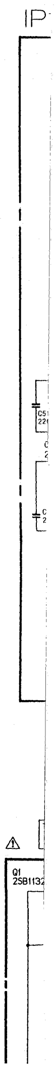


*DIFFERENCE TABLE

PARTS / MODELS	R950	R951	R974
CT-21M1FM	F-160K	F-10K	680
CT-25M1FM	F-270K	F-13K	2.2K


1
2
3
4
5
6
7
8
A
B
C
D
S991
Neutral (Blue)
Live (Brown)
ADJ-COIL
PY
PL
PC
PX
AC230V 50Hz
Neutral (Blue)
Live (Brown)
L994
RP901
R991 470K 1/2W
C991 M-.1 AC250V
L991
F991 T2A
R901 4.7 5W
D901 BYW56
D902 BYW56
C901 R1KV 2200
C902 R1KV 2200
C903 B1KV 2200
D903 BYW56
D904 BYW56
C904 400V 150μ
R902 12K 2W
R916 12K 2W
D905 BYD33G
R905 4.7 1/2W
C905 25V 470μ
T901
Q902 JC501Q.R SLOW-START
R932 2.2M 1/2W
C930 .027
R930 82K
R931 150K
L953 6.8μH
C916 .68
R904 15 2W
C932 1000
C931 1μ
IC901 TEA2261 REG-CONT
R921 1
L904 2.2μH
R940 1
R907 18 1/2W
C906 25V 47μ
D907 RD3.0FB2
R912 100
Q901 2SD1887 SW-REG
L901
D906 BYV96E
C907 R2K 330
R906 820 10W
L903
C908 2700 1600V
C935 560
C934 .039
R933 2.2K
C933 1μ
R936 1K
D908 1N4148
R939 .33 2W
R910 .27 2W
D909 RD3.0FB2
R968 6.8M 1/2W
R969 6.8M 1/2W
C913 4700 AC400V F
R938 10K
R934 2.2K
C937 .47
R937 27K
R935 2.2K
PC951 TLP621
R983 330 1/2W
LIVE
R979 27 1/2W
D950 BYW96E
C950 R2KV 1000
L951 390μH
C951 200V 100μ
C952 200V 100μ
R950
VR951 B-10K
R951
IC953 SI-3120C 12V REG
C975 1μ
D959 1N4148
D958 1N4148
R965 15K
C974 25V 10μ
Z950 PRF1600
D952 BYW95B
C955 B500V 1000
C956 16V 2200μ
C957 25V 100μ
12V
IC952 μPC78M05H 5V REG
5V
C960 10V 100μ
-30V
R955 .82 1/2W
D954 1N4003ID
C961 B500V 1000
C962 50V 100μ
R952 1K 2W
D955 RD30FB3
C963 Z-.01
C964 50V 10μ
Q952 2SB1135-R.S POWER SW-3
Z952 PRF2000
D956 BYW95B
C965 500V 1000
C966 35V 1000μ
R975 10K
R985 1.8K
C963 50V 10μ
R974
Q951 JC501-Q.R POWER-SW-2
R954 5.6K
R971 10K
Q953 JC501-Q.R ERROR-AMP
R986 1.5K
D961 RD6.2EB3 /EQA02-06E
R978 680
PZ
PA
PB
PD
RH
RS
PCB-MAIN
PCB-MAIN
PCB-MAIN
PCB-MAIN
PCB-PREAMP
PCB-LED
PCB-POWER

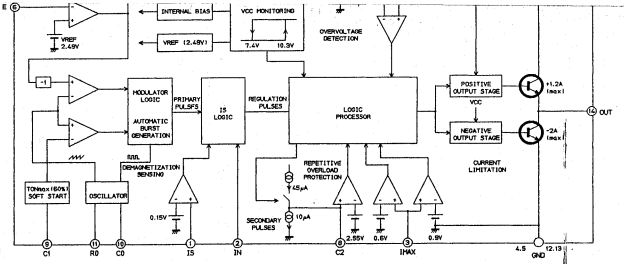

S
VCC
V+
E
ERROR AMPLIFIER
VREF 2.49V
INTERNAL BIAS
VREF (2.49V)
VCC MONITORING
7.4V
10.3V
15.7V
OVERVOLTAGE DETECTION
-1
MODULATOR LOGIC
AUTOMATIC BURST GENERATION
PRIMARY PULSFS
IS LOGIC
REGULATION PULSES
LOGIC PROCESSOR
POSITIVE OUTPUT STAGE
VCC
NEGATIVE OUTPUT STAGE
+1.2A (max)
-2A (max)
OUT
DEMAGNETIZATION SENSING
REPETITIVE OVERLOAD PROTECTION
45μA
10μA
SECONDARY PULSES
CURRENT LIMITATION
TONmax (60%) SOFT START
OSCILLATOR
0.15V


IP
Q1
2SB1132

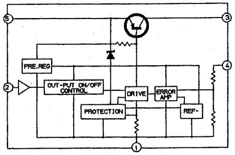
F

G

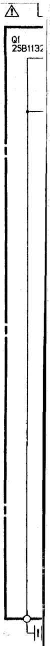
H


E
6
VREF
2.49V
INTERNAL BIAS
VCC MONITORING
VREF (2.49V)
7.4V
10.3V
OVERVOLTAGE
DETECTION
-1
MODULATOR
LOGIC
AUTOMATIC
BURST
GENERATION
PRIMARY
PULSFS
IS
LOGIC
REGULATION
PULSES
LOGIC
PROCESSOR
POSITIVE
OUTPUT STAGE
VCC
NEGATIVE
OUTPUT STAGE
+1.2A
(max)
-2A
(max)
14
OUT
DEMAGNETIZATION
SENSING
REPETITIVE
OVERLOAD
PROTECTION
45μA
10μA
SECONDARY
PULSES
CURRENT
LIMITATION
TONmax (60%)
SOFT START
OSCILLATOR
0.15V
2.55V
0.6V
0.9V
9
C1
11
R0
10
C0
1
IS
2
IN
8
C2
3
IMAX
4.5
GND
12.13

IC901
TEA2261


5
3
4
2
1
PRE.REG
OUT-PUT ON/OFF
CONTROL
DRIVE
ERROR
AMP
PROTECTION
REF-

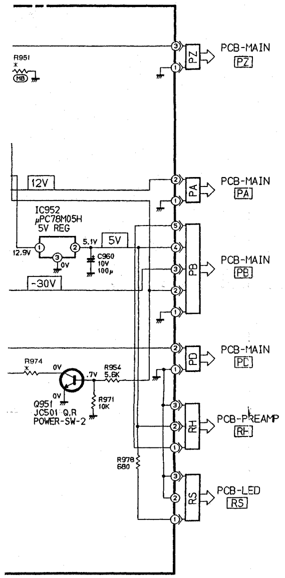
IC953
SI-3120C



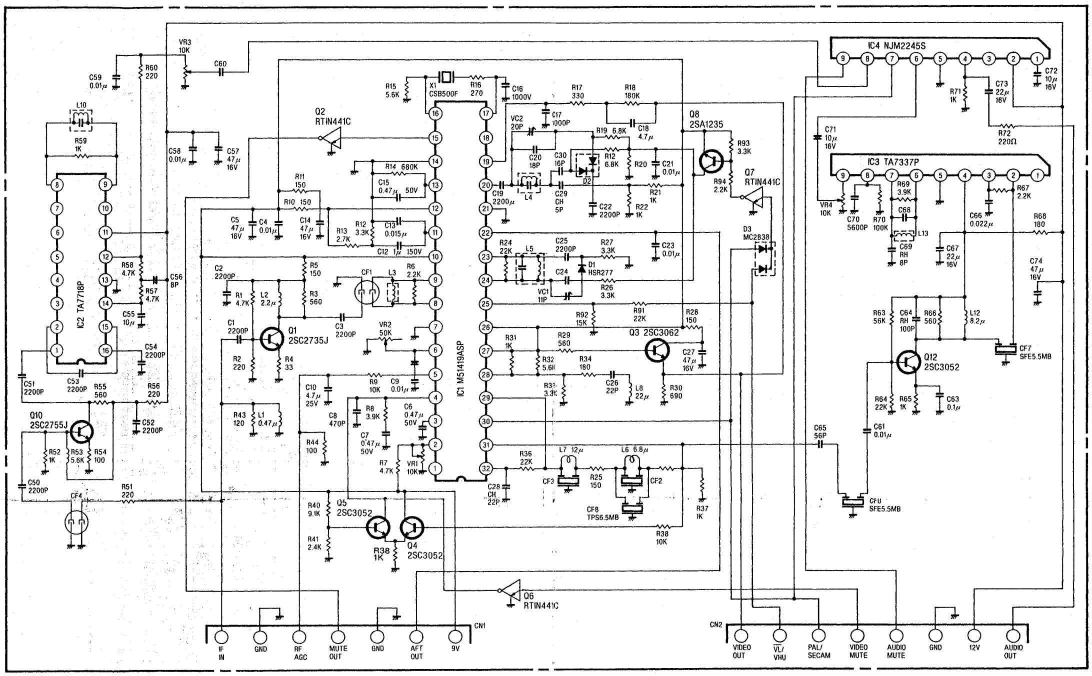
9

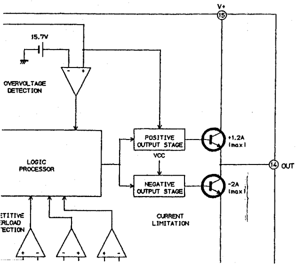
7 8 9 10 11 12 13 14

BLE		
950	R951	R974
160K	F-10K	680
270K	F-13K	2.2K

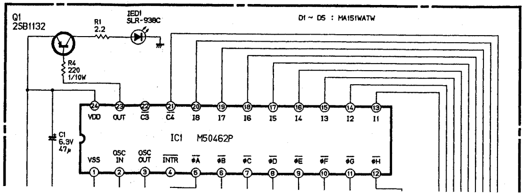

R951
PZ PCB-MAIN
12V
IC952
μPC78M05H
5V REG
12.9V
5.1V
5V
0V
C960 10V 100μ
-30V
PA PCB-MAIN
PB PCB-MAIN
PD PCB-MAIN
RH PCB-PREAMP
RS PCB-LED
R974
R954 5.6K
R971 10K
R978 680
Q951 JC501 Q.R POWER-SW-2

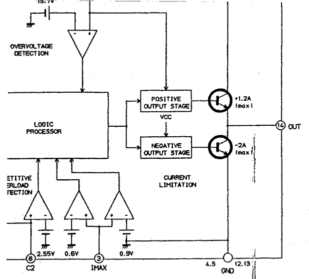
IP1A1 VIF-PACK


IC1 M51419ASP
IC2 TA7718P
IC3 TA7337P
IC4 NJM2245S
Q1 2SC2735J
Q2 RTIN441C
Q3 2SC3062
Q4 2SC3052
Q5 2SC3052
Q6 RTIN441C
Q7 RTIN441C
Q8 2SA1235
Q10 2SC2755J
Q12 2SC3052
X1 CSB500F
D1 HSR277
D3 MC2838
VR1 10K
VR2 50K
VR3 10K
VR4 10K
CF7 SFE5.5MB
CF8 TPS6.5MB
CF0 SFE5.5MB
L10
CN1
IF IN
GND
RF AGC
MUTE OUT
GND
AFT OUT
9V
CN2
VIDEO OUT
VL/VHU
PAL/SECAM
VIDEO MUTE
AUDIO MUTE
GND
12V
AUDIO OUT

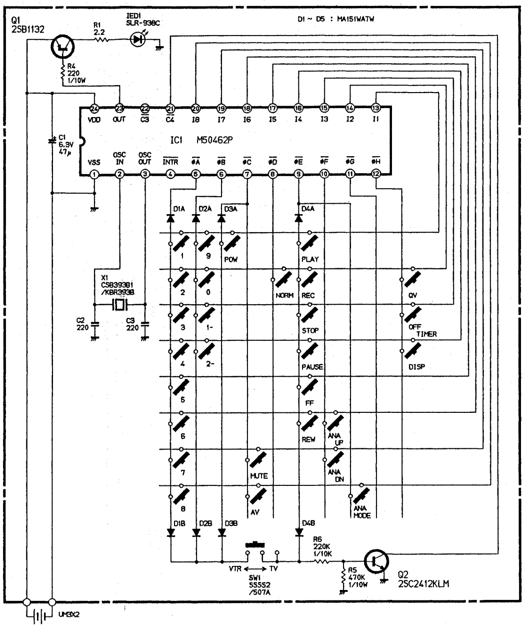

V+
15
15.7V
OVERVOLTAGE DETECTION
LOGIC PROCESSOR
POSITIVE OUTPUT STAGE
VCC
NEGATIVE OUTPUT STAGE
+1.2A Imax
-2A Imax
14 OUT
CURRENT LIMITATION

⚠ TRANSMITTER-REMOCON


Q1 2SB1132
R1 2.2
LED1 SLR-938C
D1 ~ D5 : MA151WATW
R4 220 1/10W
C1 6.3V 47μ
IC1 M50462P
VDD
OUT
C3
C4
I8
I7
I6
I5
I4
I3
I2
I1
VSS
OSC IN
OSC OUT
INTR
ΦA
ΦB
ΦC
ΦD
ΦE
ΦF
ΦG
ΦH

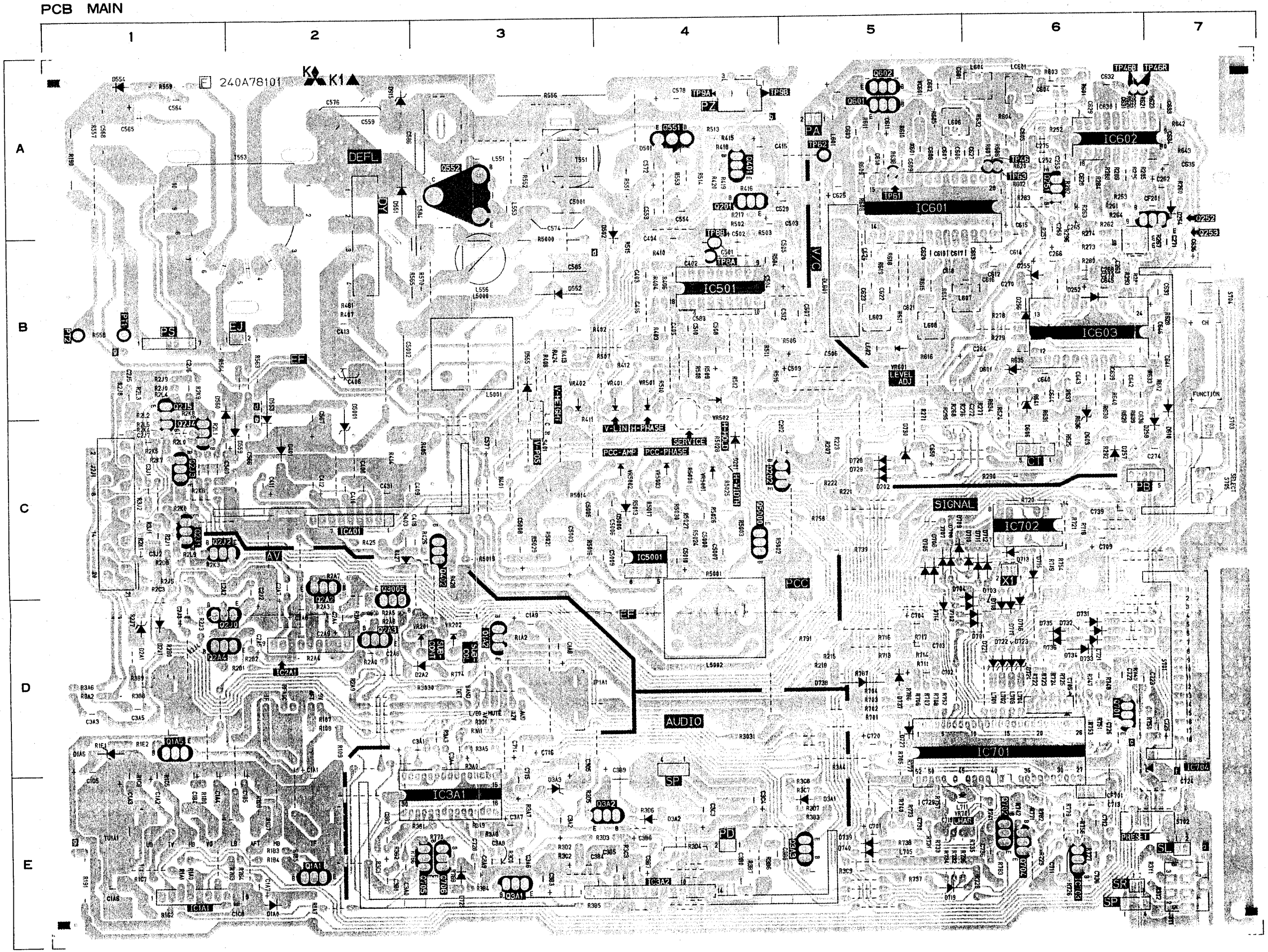

OVERVOLTAGE DETECTION
LOGIC PROCESSOR
POSITIVE OUTPUT STAGE
VCC
NEGATIVE OUTPUT STAGE
+1.2A (max)
-2A (max)
14 OUT
ETITIVE
ERLOAD
TECTION
CURRENT LIMITATION
2.55V
0.6V
0.9V
8 C2
3 IMAX
4.5
12.13
GND

⚠ TRANSMITTER-REMOCON

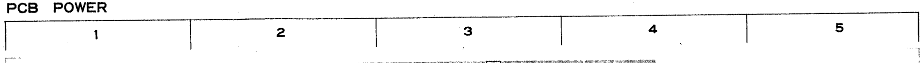

Q1 2SB1132
R1 2.2
IED1 SLR-938C
D1 ~ D5 : MA151WATW
R4 220 1/10W
C1 6.3V 47μ
IC1 M50462P
24 VDD
23 OUT
22 C3
21 C4
20 I8
19 I7
18 I6
17 I5
16 I4
15 I3
14 I2
13 I1
1 VSS
2 OSC IN
3 OSC OUT
4 INTR
5 φA
6 φB
7 φC
8 φD
9 φE
10 φF
11 φG
12 φH
D1A
D2A
D3A
D4A
X1 CSB393B1 /KBR393B
C2 220
C3 220
1
9
POW
PLAY
2
0
NORM
REC
QV
3
1-
STOP
OFF TIMER
4
2-
PAUSE
DISP
5
FF
6
REW
ANA UP
7
MUTE
ANA DN
8
AV
ANA MODE
D1B
D2B
D3B
D4B
VTR ↔ TV
SW1 SSSS2 /507A
R6 220K 1/10K
R5 470K 1/10W
Q2 2SC2412KLM
UM3X2

CT-21M1FM
CT-25M1FM(2/2)

PCB MAIN

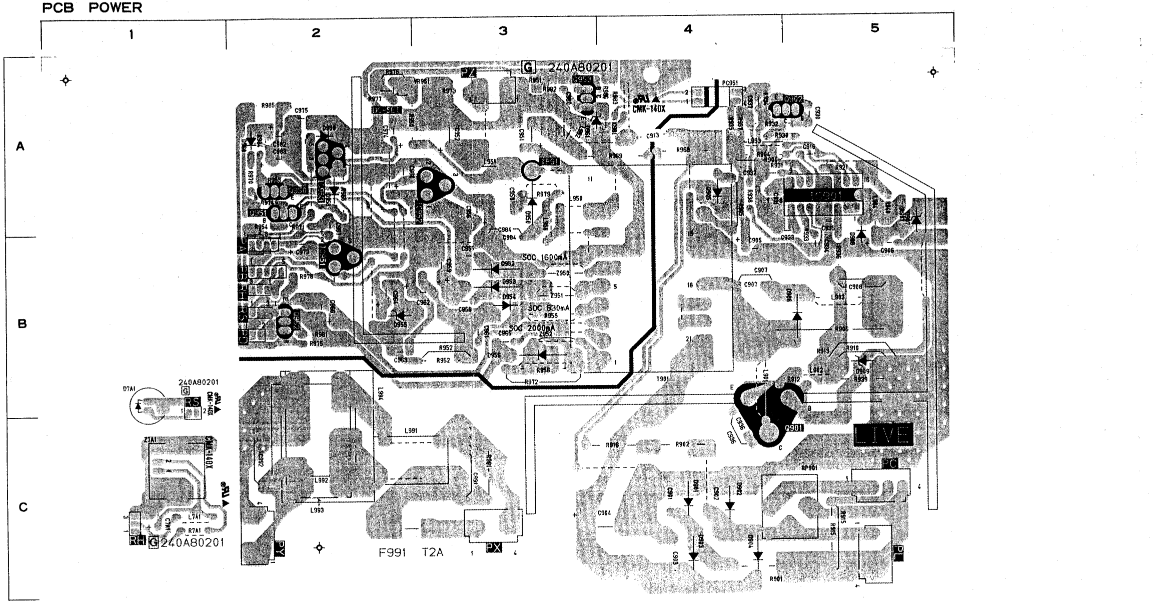

1
2
3
4
5
6
7
A
B
C
D
E
240A78101
K1
DEFL
DY
PS
EJ
EF
AV
IC401
IC501
IC5001
IC601
IC602
IC603
IC702
IC701
IC704
IC3A1
IC3A2
IC1A1
IC2A1
Q552
Q551
Q401
Q201
Q601
Q602
Q252
Q253
V/C
PA
PZ
TP9A
TP9B
TP62
TP8A
TP8B
TP51
TP46
TP46B
TP46R
TP63
V-HEIGHT
V-POS
V-LIN
H-PHASE
SERVICE
H-HOLD
PCC-AMP
PCC-PHASE
H-WIDTH
LEVEL ADJ
CT
PB
SIGNAL
X1
PCC
AUDIO
SP
PD
SUB-CONT
SUB-COL
CHAR
PRESET
SL
SR
FUNCTION
SELECT
L5001
L5002
T551
T553

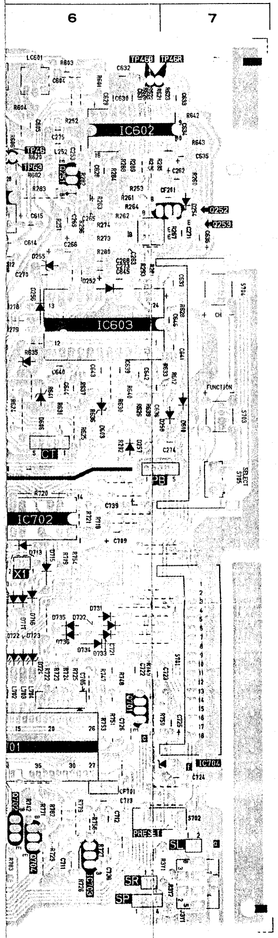
PCB POWER



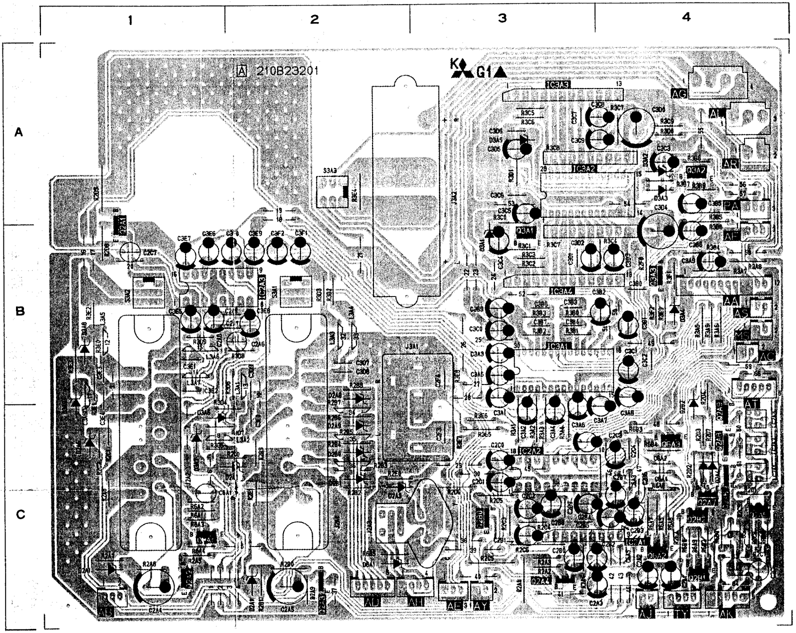
C1A6
R162
IC1A1
C1C8
D1A8
R385
SP

PCB POWER

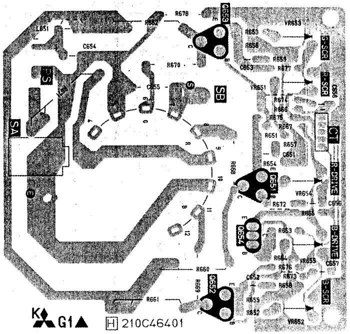

1
2
3
4
5
A
B
C
240A80201
CMK-140X
PC951
Q902
IC901
Q901
T901
LIVE
5OC 1600mA
5OC 630mA
5OC 2000mA
F991 T2A
PX
PY
PC
RS
RH
D7A1
Z7A1
L7A1
R7A1
C7A1
L991
L992
L993
L994
C904
R901
R902
R916
D901
D902
D903
D904
RP901
R915
R972
R952
Z950
Z951
Z952
L950
D950
D951
D952
D953
D954
D955
D956
R979
R968
R969
C913


6
7
IC602
IC603
IC702
IC704
FUNCTION
SELECT
PRESET
TP46B
TP46R
TP46
TP63
Q252
Q253
X1
SL
SR
SP

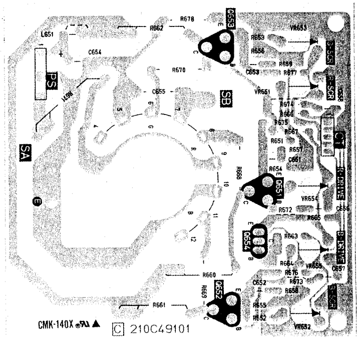
PCB PCC(COMPONENT SIDE)(CT-25M1FM only)


1
2
3
4
A
B
C
210B23201
G1
IC3A3
IC3A2
IC3A1
IC3A4
IC2A1
IC2A2
J3A1
J3A2
S3A1
S3A2
S3A3
AG
AL
AR
PA
AF
AA
AS
AC
AT
AD
AH
AE
AY
AJ
AK

PCB CRT〔CT-25M1FM only〕


R678
R662
L651
C654
Q653
E
C
B
VR653
R653
R656
G-SCR
R659
C653
R677
R670
R-SCR
C658
VR651
C655
S
SB
PS
L691
R674
R666
R675
R667
SA
G
R
R651
R657
C651
CT
9
R668
R654
Q651
10
R-DRIVE
VR654
R672
C656
R665
11
12
Q654
R663
B-DRIVE
R664
VR655
C657
R676
R673
R660
C652
R658
Q652
R669
B-SCR
R655
R661
R652
VR652
K
G1▲
H 210C46401

PCB CRT〔CT-21M1FM only〕


R678
R662
L651
C654
Q653
E
C
B
VR653
R653
R656
G-SCR
R659
C653
R677
R670
R-SCR
C658
PS
R691
VR651
C655
SB
5
6
7
R674
R666
R675
4
G
R667
SA
R
R651
R657
C651
CT
9
R668
R654
Q651
10
R-DRIVE
VR654
R672
C656
R665
11
12
Q654
R663
B-DRIVE
R664
VR655
C657
R676
R673
R660
C652
R658
Q652
R669
B-SCR
R655
R661
R652
VR652
CMK-140X ▲
C 210C49101

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